

**EQUITY, DEVELOPMENT AND NEW KNOWLEDGE PRODUCTION:
AN OVERVIEW OF THE NEW HIGHER EDUCATION POLICY
ENVIRONMENT IN POST-APARTHEID SOUTH AFRICA**

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Introduction

This article traces the influence of an important body of international literature on the development of post-apartheid policies in South African higher education and training (HET). Its main focus is on the emergence of a new mode of knowledge production and its impact on HET. However, questions of equity and economic development – and their inter-relationship - are key themes implicit in the analysis. The article highlights a fundamental tension that permeates HET in South Africa today. On the one hand, the new mode of knowledge production and the new HET policies provide new access routes into HET for previously excluded constituencies. On the other hand, all of these changes and the economic development trajectory they privilege pose real problems around the increasing commercialisation and marketisation of HET in South Africa – changes that have impacted negatively on equity in higher education world-wide. However, the discussion concludes by indicating that the jury is not yet out in South Africa on which tendency is dominant or whether these interests – development versus equity – are in fact mutually exclusive.

The international influences

The international literature on new knowledge production has triggered a debate in South Africa that has come to be known as the ‘Mode 2’ debate. Two books in this body of knowledge stand out as seminal. The first, published in 1994 and authored by Gibbons, Limoges, Nowotny, Schwartzman, Scott and Trow, is entitled *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies*. The second book is a 1995 work authored by Scott (although shaped largely by the approach developed in Gibbons *et al.*) entitled *The Meanings of Mass Higher Education*. Gibbons and Scott have published several additional book and journal articles on the subject and clearly lead the Mode 2 debate.¹

The Mode 2 thesis arises out of a set of inter-related ‘cause and effect’ phenomena. The key causal dynamic is the seemingly contradictory rise of both globalisation and massification, the latter phenomenon referring to the expansion of access to learning in HET over the past two

decades. According to the logic of Scott and Gibbons *et al.*, the effect of these politico-economic determinants on education and training has been felt in two dramatic ways:

A fundamental transition has taken place in the functioning and structure of higher education institutions world-wide. This has entailed a shift away from elite and insular institutions toward more open and responsive systems of teaching and learning.

A new mode of knowledge production has emerged, which Scott and Gibbons *et al.* term 'Mode 2'. It is fundamentally different from disciplinary science and research as we know it today – what they term 'Mode 1'. The new mode of knowledge production is intrinsically trans-disciplinary, trans-institutional and hetero-geneous. In short, Mode 2 is problem-solving knowledge.

The Mode 2 thesis is not merely a description of a new way of carrying out trans-disciplinary research. More importantly, it is an outcome of powerful social forces (globalisation and the massification of access) that are making a simultaneous impact, and that have resulted in dramatic changes in the structure and functioning of higher education institutions. It is this composite notion of Mode 2 – reading the new research mode together with its associated changes in HET and the knowledge economy – that will be applied and discussed in this article.

Globalisation

Scott and Gibbons *et al.* underpin their thesis on knowledge production with an analysis of the changes occurring in the global economy. Borrowing from much of the growing international literature on globalisation, they describe globalisation as the outcome of three simultaneous developments in the advanced economies of the world: the demise of Fordist production regimes and the onset of global economic crisis in the mid-1970s; the advent of information technology in the early 1980s, and in particular its facilitation of the internationalisation of finance capital; and the rise of innovative forms of work organisation in the early 1980s, now referred to as 'flexible specialisation' or 'post-Fordism'. The new economic system that emerged from these three developments is characterised by high-quality export manufacture aimed at specific consumer niche markets. Innovation is at the heart of this new system – the ability to continuously reinvent products and add value to existing designs through reconfiguring new information and knowledge about product and process.

All of the above developments brought with them new education and training (ET) demands –

for example, the need for a highly skilled labour force able to employ the new technologies and add value to existing goods and services. However, it is not merely specialised skills that are needed; more well-rounded and diverse skill competencies are in demand. Enterprises require entire labour forces that are sufficiently skilled to adapt to unpredictable and volatile global product markets and rapid technological change. They require broad problem-solving skills to anticipate flaws in production. Workers need to understand how the new technologies can be optimally applied, how the entire production process unfolds, how the environmental context shapes the execution of tasks, and how unexpected factors arise. It is the ability to retool and respond quickly to rapidly changing market conditions that is highly valued.²

Massification

A second causal factor in the emergence of Mode 2 research and in the dramatic changes that have taken place in the structure and functioning of HET institutions is the massification or ‘massification’ of access to higher learning. Massification, although related to the rapidly expanding high skill needs of modernising economies over the past four to five decades, has also arisen as a result of a very different trajectory: egalitarian pressures over the past three decades to reduce the gross social inequalities in a number of societies across the globe by making access to further and higher education more available to working class and other marginalised communities. The dual impact of these external and internal shocks – globalisation and massification – has led to a major shift in the institutional organisation and delivery of higher education programmes since the late 1980s.

In most higher education institutions, the mass training of skilled professionals has come to constitute their main function. The research function is a minority activity. The majority activity at these institutions is the offering of professional programmes, often in professional schools such as those for engineering, medicine, management studies and architecture. With the massification of higher education over the past four decades has come the proliferation of highly skilled professionals across civil society – the creation of a skilled citizenry. The capacity for intellectual creativity and scientific innovation has been more widely distributed than ever before across different social institutions. This development is profound because, for the first time in higher education’s history, there are now far more skilled professionals, knowledge workers and knowledge organisations *outside* rather than *within the formal boundaries* of universities. This factor, along with innovative developments in the research realm, have led to the emergence of what Scott and Gibbons *et al.* have described as Mode 2 knowledge production. Mode 2 research

is founded precisely on the massification of professional experts in industry and civil society,

the greater merging of vertical (disciplinary) knowledge with horizontal (work or community-based) experiential competencies. Scott⁴ elaborates:

... mature students on franchised degrees in further education colleges do not possess the same intellectual resources as most (not all) students at Oxford and Cambridge, the tacit knowledge of social elites and the internalised values of expert disciplines. Nor, more practically, can colleges ever expect to possess equivalent resources, in terms of highly qualified teachers or richly stocked libraries. But this does not mean that either mature students or FE colleges are without resources of a different kind. Where Oxbridge students draw on the closed systems of elite culture and expert knowledge, local mature students may draw on the open systems of community involvement or work (or life) experience.

The new emphasis on programmes is therefore about making higher education knowledge and qualifications more responsive to contemporary societal and economic needs. In so doing, it provides for the radical reworking of the intellectual culture of higher education, and universities in particular, away from elite and insular institutions toward more open and responsive systems of teaching and learning.

Scott argues that the net result of all of these pressures – both external and internal – has led to a shift from closed to open intellectual systems in the academic arena. This shift entails an epistemological transition away from closed knowledge systems managed only by canonical norms and collegial authority to open systems which are dynamically interactive with outside social interests and knowledge structures. This shift has impacted on both the teaching (learning) and research functions of higher education institutions. First, the increase in enrolments from a wider array of social classes and age groups, with students from a diverse range of life and work experiences, has led to an equivalent shift in the ‘higher learning’ function of institutions. There has been a move away from the elite cultures and expert knowledges of privileged middle classes (the traditional constituency of elite institutions), to incorporate the values of non-elite communities, particularly the practical competencies required in semi-professional, professional and community life. Higher education institutions are now offering a greater mix of programmes, some based strictly on disciplinary knowledge and canonical norms, others emphasising the development of professional competence in the workplace.

Second, the transformation of the research function is perhaps the most fundamental transition yet, with the emergence of Mode 2 forms of knowledge production which involve many more players than university intellectuals, and which are trans-disciplinary and accountable to larger social and economic needs than is currently the case.

Four key changes in the shift to an open system

Scott identifies four key changes that are associated with the shift towards a mass, open HET system. These are:

From courses to credits: The main currency of traditional (elite) higher education institutions are the courses they offer and the qualifications they certificate. These qualifications are associated with powerful canonical assumptions about the need for structured and sequential learning and the need to socialise students into the rules and rituals of particular disciplines and professional cultures. The emphasis within an open system of HET, however, is towards new forms of curricular organisation such as modular degree schemes, credit accumulation and transfer schemes (CATS), and outcomes-based assessment. These new mechanisms offer points of entry and exit without slavish regard to the academic symmetry of the whole. Rather, in a credits-based system, connections between academic topics and levels are pragmatically derived rather than cognitively prescribed.⁵ In many countries (for example, Australia, New Zealand, the United Kingdom and South Africa) these changes are buttressed by the implementation of a unified national qualifications framework (NQF) which institutionalises these principles – of credit accumulation and portability, of regular entrance and exit points, and of seamless learning along an interconnected qualifications ladder – across the entire national ET system.

From departments to programmes: The second change is a shift away from discipline-based departments to ‘looser frameworks which set the rules and boundaries within which the new credits currency can operate’⁶. Increasingly, the tendency is towards the formation of looser academic structures such as ‘Schools’ built around trans-disciplinary theme categories such as ‘Cultural Studies’ or ‘Environmental Sciences’. This is a substantive change because previously Departments were the organisational embodiment of the disciplinary codes and values around which academics sought their identity. Schools, while threatening the identity of disciplines, are more flexible and successful in putting together trans-departmental, trans-institutional and trans-disciplin-ary collaborative efforts between multiple knowledge producers and users.

From subject-based teaching to student-based learning: With the emergence of mass HET provision, the shift to student-centred learning has been primarily a logistical and only

secondarily a pedagogic phenomenon. It is less labour-intensive than the traditional model of student tutoring and provides HET institutions with important cost-efficiencies. It also provides students with far greater choice and ownership of their customised modular packages, with the teacher playing the role of facilitator rather than expert.

From knowledge to competence: Traditional notions of the knowledge that students acquire through academic learning are that they are provisional, contested and problematical. It is for this reason that critical thinking skills are considered the central capability in traditional academic learning – to interrogate the ‘problematic’ and ‘incompleteness’ of current knowledge. The shift to ‘competence’ comprises a very different view of the higher education enterprise – ‘one where knowledge skills can be sufficiently complete to be operationalised into identifiable skills’.⁷ These developments have come about in part to make more explicit and transparent the outcomes expected from non-traditional adult and mature learners who are now accessing higher learning in large numbers.

Towards a unified system and institutional differentiation

These dramatic developments have had the effect of moving national systems of HET away from binary or divided systems towards more unified single systems with common features and a homogenising mission. Indeed, convergence of this kind is a reality in many national systems as rigid functional distinctions between universities and polytechnics (called technikons in South Africa) are diluted in response to the multiple impact of massification, globalisation and institutional creep. However, the erosion of functional differences between previously distinct types at each end of the binary divide does not suggest the rise of uniform missions for all institutions in mass systems. Indeed, system-wide dichotomy has given way to institutional-level pluralism and diversity.

Institutions within mass HET systems no longer function according to their singular missions of the past. These binary categorisations have become inflexible and incapable of adapting to the increasing pluralism and volatility within the system. Institutions s8(u)-2tre non respdng tans s8(u)-8(ltip c)]TJ0.000

increasingly unified system, historically acquired diversity is never entirely lost. Rather, these institutions converge within a unified system because their boundaries are now far more permeable than before, enabling partnerships and new institutional configurations across old divides. Institutions must seek their distinctiveness and competitiveness vis-à-vis other institutions, not so much from the old essentialist definitions of institutional type but by customising individualised ET niche areas in which they wish to excel.

It is clear from the above discussion that a unified or mass higher education system is characterised by a range of seemingly contradictory impulses. On the one hand, it will massify and will require a single system of regulation to effectively manage it. On the other hand, it will differentiate by providing a wider range of course offerings and research services in new and innovative forms of delivery.

HET has become more dynamic and volatile than ever before, with multiple pressures reshaping its contours. Higher education today is far more permeable, responsive and open, with 'system' boundaries less clear and less stable than during the past 'elite' era. Most 'systems' cannot be defined as 'ideal-types' but are in fact hybrid formations with old elements from past elite and binary structures coexisting with newer elements that tend towards unified formations. The challenge of new state policy on higher education today is not so much to try to specify the exact institutional shape – for example, a binary or unified structure – but rather to place the greatest emphasis on the regulatory environment. The regulatory environment will have a dual task: to establish a single, coherent national system of norms, rules and procedures to 'steer' the entire higher education project in directions which are consonant with key economic, social and cultural goals; and to facilitate in an orderly fashion the diversity and responsiveness now an intrinsic part of all modern systems of higher education.

Impact two: The emergence of Mode 2 knowledge production

Scott and Gibbons *et al.* argue that a second fundamental transformation is occurring, leading to the emergence of a new mode of knowledge organisation which is taking shape outside of existing academic disciplines and, in part, outside the insularity of the traditional university. This new knowledge has its origins in the synergy and cross-fertilisation taking place in the interstices between established disciplines and in the interaction of academic scientists with other knowledge practitioners located in firms, parastatals and civil society, all of whom are participants in the quest for industrial innovation and social renewal.

Scott and Gibbons *et al.* argue that the key feature of this new form of knowledge production

is trans-disciplinarity – which they term Mode 2 knowledge. It arises in the interstices of existing disciplines, and therefore is ‘generated in the context of application’ instead of being developed first and then applied to the context later. As such, Mode 2 knowledge has two additional qualities: it is organisationally diverse and heterogeneous. Organisational diversity arises because Mode 2 is the outcome of teams of knowledge workers with diverse backgrounds, who in most cases are employed in pursuit of innovation by networking firms – they include academicians, R&D designers, production engineers, skilled craftsmen and social scientists.

Mode 2 knowledge is heterogeneous because its solutions comprise both empirical and theoretical components, cognitive and non-cognitive elements in novel and creative ways. As such, these hybrid sciences blur the boundaries between the established disciplines (Mode 1 sciences); they are not readily integrated within the participating cluster of disciplines. In this sense, Mode 2 is not inter-disciplinary as it cuts across all academic disciplines. Table 1 highlights some of the key distinguishing features of these two knowledge forms.

The above analysis has provided a brief account of the nature and content of the Mode 2 thesis and the concomitant changes which have been brought about in the structure and functioning of HET. The next section will explore the ways in which this debate has been influential in South African HET policy making.

TABLE 1	
The Characteristics Of Mode 1 and Mode 2 Knowledge	
Mode 1 Disciplinary Knowledge	Mode 2 Problem-Solving Knowledge
<p>Disciplinary knowledge</p> <p>Knowledge is formal and coded according to the canonical rules and procedures of academic disciplines.</p>	<p>Trans-disciplinary</p> <p>Knowledge is problem-oriented; it attempts to solve problems by drawing on multiple disciplines, which interact in the real-world contexts of use and application, yielding solutions and new knowledge which are not easily reducible to any of the participating academic disciplines.</p>
<p>Homogeneous production sites</p> <p>The development of disciplinary knowledge has historically been associated with universities and other institutions of higher education. These institutions often exist in (ivory tower) isolation from real-world problems.</p>	<p>Heterogeneous, trans-institutional production sites</p> <p>Knowledge is produced in multiple sites by problem-solving teams with members emanating from various institutions: from Higher Education institutions, networking enterprise R&D laboratories, state S&T institutes, and NGO think-tanks. Formal partnerships and joint ventures forged between these actors to generate new knowledge and exploit its commercial potential are common.</p>
<p>Insular knowledge</p> <p>The only reference points for disciplinary knowledge are academic peers and the canonical rules and procedures internal to the academic discipline.</p>	<p>Socially useful knowledge</p> <p>Many of the problems addressed by trans-disciplinary and trans-institutional knowledge workers today are of great social importance or commercial value. This is socially accountable knowledge.</p>

Impact on South African higher education policy formulation

South Africa underwent its first democratic elections in April 1994 that witnessed the rise to power of President Nelson Mandela and his African National Congress (ANC) party. These monumental political changes signified the formal ending of the Apartheid era with its racially segregated and socially divisive policies. The Mandela government, on taking office, began implementing new social and economic policies in all governance spheres. These policies had been developed even before the elections through wide-ranging processes of consultation with all key societal stakeholders – some processes even dating back to the unbanning of the ANC in February 1990.

One of the first actions of the new government in the HET sphere was to appoint a National Commission on Higher Education (NCHE) in November 1995. Its task was to recommend new HET policies to government that overcame the inequities and inefficiencies that characterised the sector in the past. The policy recommendations eventually submitted and approved by government were fundamentally shaped by the analytical framework developed by Scott and Gibbons *et al.* The politico-economic underpinnings of change in HET emphasised by these researchers – globalisation and massification – feature prominently in the new HET policy documents. Key recommendations include: a shift to a more open and responsive HET system; greater emphasis on programmatic rather than disciplinary-based provision; and the adoption of a single co-ordinated national system of HET that emphasises homogeneity in the regulatory environment and pluralism in the institutional missions of diverse HET providers. The recommendations also create an enabling environment in which Mode 2 research will flourish.

The next section discusses the content of each of these recommendations. The key policy texts that are referred to include the Final Report of the NCHE; the Department of Education's Green and White Papers on Higher Education released in 1996 and 1997 respectively; and the Higher Education Act of 1997.⁸

Dual pressures: Privileging globalisation and the knowledge economy

The new HET policy documents emphasise globalisation and massification (or 'democratisation' in the South African context) as the two centrally determining social forces that have driven the transformation and reconfiguration of HET internationally. This dual causality for change in HET arises in South Africa, firstly, because of the need to redress the effects of apartheid in the educational realm and to construct new social relationships between state, civil society and ET institutions, and secondly, because of South Africa's re-insertion into a highly competitive and volatile world economy:

The transformation of higher education is part of the broader process of South Africa's political, social and economic transition, which includes political democratisation, economic reconstruction and development, and redistributive social policies aimed at equity. This national agenda is being pursued within a distinctive set of pressures and demands characteristic of the late twentieth century, often typified as globalisation.... The policy challenge is to ensure that we engage critically and creatively with the global imperatives as we determine our national and regional goals, priorities and responsibilities. In particular, the South African economy is confronted with the formidable challenge of integrating itself into

the competitive arena of international production and finance which has witnessed rapid changes as a result of new communication and information technologies. These technologies, which place a premium on knowledge and skills, leading to the notion of the ‘knowledge society’, have transformed the way in which people work and consume. Simultaneously, the nation is confronted with the challenge of reconstructing domestic social and economic relations to eradicate and redress the inequitable patterns of ownership, wealth and social and economic practices that were shaped by segregation and apartheid. This has resulted in the emergence of a sophisticated urban core economy with a relatively well-developed technological infrastructure and an increasingly highly educated skilled labour force, co-existing side-by-side with a peripheral rural and informal urban economy from which the majority of the population, previously denied access to education and training and restricted to unskilled labour, eke out a living.⁹

South Africa is going through a unique historical phase where democratic consolidation and social reconstruction and development are priority goals. It is this particular context which makes Mode 2 forms of research so attractive to social actors across the political spectrum. At the same time, however, this same context enables the detractors of the Mode 2 thesis to argue that Mode 2 has assisted in the triumph of economic reductionism and narrow economic development over broader equity and social considerations. These critical considerations will be taken up in the conclusion to this article.

The recommendations of the NCHE

The analysis and recommendations of the NCHE, particularly those that have been influenced by the logic of Scott and Gibbons *et al.*, can be categorised into five major areas. These are:

- An emphasis on three central pillars in the transformation of HET: increased participation, responsiveness and partnerships,
- a single co-ordinated national system of HET provision,
- institutional diversity and permeable boundaries,
- programme-based provision, and
- the emergence of Mode 2 research.

The content and character of each of these recommendations are highlighted below.

The three pillars of HET transformation

The NCHE report¹⁰ identified three central features of the new framework for HET. These were:

increased participation in the system by a diverse range of constituencies,
 increased co-operation and partnerships between higher education and other social actors and institutions,
 greater responsiveness to a wide range of social and economic needs.¹¹

The NCHE report argued that these three features represented a ‘radical departure from previously divisive and fractured social structures and a move towards new and more integrative forms of social organisation’.¹² The emphasis on increased participation signified a shift away from a higher education system which ‘enrols primarily middle class students into elite professional and scholarly pursuits, to a system characterised by a wider diversity of feeder constituencies and programmes’¹³:

In the international literature on higher education such expansion is usually described as a transition from an ‘elite’ to a ‘mass’ system, or as ‘massification’. The terminology denotes more than a mere increase in enrolment. It also refers to a series of concomitant changes that must accompany greater numbers. These include: the composition of the student body; the diversification of programmes, curricula and qualifications; the introduction of multiple entry and exit points; new relations between study and the workplace; and shifts in institutional functions and missions.... It can be anticipated that massification will lead to more flexible approaches to the higher education curriculum, as it has elsewhere. Traditional models of courses and qualifications are based on academic assumptions about the need for sequential learning in defined disciplines. These might for instance be augmented by an approach based on modular programmes and the accumulation of credits, offering multiple entry and exit points, while progression is measured in terms of pragmatic connections between topics and levels, as well as the norms of cognitive coherence.¹⁴

The second feature, an emphasis on co-operative forms of governance, reflected a shift away from the classical dichotomy between institutional autonomy and state intervention in higher education management to a more consensual and multiple-partner conception of governance. The Commission argued that the old relations of academic insularity and institutional self-reliance

would have to make way for recognition of the functional interdependence between multiple actors with a stake in higher education. Nationally and regionally, there would have to be new linkages and partnerships between the various arms of the state, higher education institutions, commercial enterprises, parastatals, research bodies and NGOs.¹⁵

The third feature, increased responsiveness, indicated a shift away from 'academic insularity, a closed system governed primarily by the norms and procedures of established disciplines, towards an open higher education system which interacts more with its societal environment'¹⁶:

At an epistemological level, increased responsiveness entailed a shift from closed knowledge systems (controlled and driven by canonical norms of traditional disciplines and by collegially recognised authority) to more open knowledge systems (in dynamic interaction with external social interests, 'consumer' or 'client' demand, and other processes of knowledge generation). Such interaction will lead to the incorporation of the perspectives and values of previously silenced groups into the educational and cognitive culture of institutions. Higher education institutions will increasingly have to offer a greater mix of programmes, including those based on the development of vocationally-based competencies and skills needed in the workplace.¹⁷

A single co-ordinated national system of HET provision

The second category of recommendations made by the NCHE was that 'higher education in South Africa should be conceptualised, planned, governed and funded as a single co-ordinated system'.¹⁸ The need for such a system arose because of what the Commission perceived to be an absence of any sense of 'system' in South African higher education. Three major systemic deficiencies were noted:

There was a chronic mismatch between higher education's output and the needs of a modernising economy.

There was a strong inclination towards closed-system disciplinary approaches and programmes that has led to inadequately contextualised teaching and research. The content of the knowledge produced and disseminated was insufficiently responsive to the problems and needs of the African continent, the Southern African region, or the vast numbers of poor and rural people in our society.

There was a lack of regulatory frameworks, because of a long history of organisational and administrative fragmentation and weak accountability. This inhibited planning and

co-ordination, the elimination of duplication and waste, the promotion of better articulation and mobility, and the effective evaluation of quality and efficiency.¹⁹

Overcoming this legacy of fragmentation and inefficiency would require:

... system-wide and institutional planning processes able to co-ordinate the overall shape and size of the system.... The Commission believes that a single co-ordinated system of higher education requires the development, through consultation and negotiation, of an overall national higher education plan. This will be a major change from current practice in which decisions about overall student enrolments, and their distribution across different programme levels and fields, are not made at a system level.²⁰

Key tools in the creation of a single co-ordinated system of HET would be the development and subsequent utilisation of coherent planning instruments both at national and institutional levels. The HET policy documents envisage two types of 'plan'. They are:

A National Higher Education Plan: The NCHE argued that a National Higher Education Plan is pivotal to the goal of effective co-ordination in HET.²¹ The Plan would be developed on a rolling three-year basis. Its aim would be to establish a programme mix which was 'broadly in line with emerging national and regional needs which will require system-wide and institutional planning processes able to co-ordinate the overall shape and size of the system'.²²

Institutional Plans: On the basis of guidelines provided by the National Plan, HET institutions would then be required to devise three-year rolling plans which would include: institutional mission statements; proposed programmes; indicative targets for enrolment levels by programme, race and gender equity goals; and proposed measures to develop new programme areas.²³ Such an institutional plan would be expected to 'take into account the unique or distinctive mission of the institution, and be informed by student demand, by labour market requirements, by societal equity and development needs and by the new demands of knowledge production in the context of technological innovation and globalisation'.²⁴

Institutional diversity and permeable boundaries

Even though the NCHE proposed a single co-ordinated system with strong homogenising tendencies and central planning imperatives, the Commission was at pains to emphasise the need for on-going institutional diversity and flexibility regarding boundaries – thereby mirroring Scott’s own emphasis on institutional pluralism and permeable boundaries. The Commission argued:

The wide array of higher education programmes makes the boundaries of higher education difficult to define. So do conceptions of lifelong learning, the recognition of prior learning and articulation and transfer between further and higher education. All pre-suppose a continuum of learning that makes it extremely difficult to draw hard boundaries around higher learning.... The Commission’s task, therefore, is not to propose a unified, binary or stratified institutional structure for the single co-ordinated system, but to recommend transitional arrangements that will hold while national and regional needs mature, while planning and other capacities are developed, and while institutional development takes place.... The Commission’s view [is that] in the medium to long term, global and South African conditions are likely to push the single co-ordinated system towards a more responsive, dynamic and ‘fuzzy’ relationship between institutions and programmes rather than towards a new binary or stratified system.... The Commission [therefore] believes that the primary challenge of a state policy on higher education is not firstly to try and specify the exact system (for example, a stratified, binary or unified structure) but rather to place greater emphasis on obtaining systemic coherence and ensuring diversity through a regulatory environment. The regulatory environment will have several tasks: firstly, to create the conditions that enable optimal levels of co-operation and responsiveness; secondly, to establish a single, co-ordinated national system of policies and procedures to steer the entire higher education system in directions consistent with key economic, social and cultural goals; and thirdly, to facilitate in an orderly fashion the diversity of programme offerings.²⁵

The new system should ensure diversity in terms of institutional missions and programme mixes. This should evolve in ‘terms of a planned process based on the recognition and pragmatic consideration of current institutional missions and capacities on the one hand, and emerging national and regional needs and priorities on the other. Over time it will be possible to assess whether the new system should retain the distinction between universities, technikons and colleges, change the nature of the distinction, and increase or decrease the number of institutional types’.²⁶

Programme-based provision

A fourth category of NCHE recommendations strongly influenced by Scott and Gibbons *et al.* is the notion of ‘programmes’ and ‘programmatically provision’. Programmes are viewed as key instruments in the creation of a future single co-ordinated system. Programmes provide ‘a clear means of reducing the potential chaos of an unlimited number of courses and qualifications to a form compatible with system-wide planning, goal-directed funding and effective quality assurance’.²⁷

In the past, learner mobility was restricted by the rigid boundaries which separated the differing sub-sectors of the education and training system (colleges, polytechnics and universities) and by the terminal qualifications on offer. Diverse course provision was constrained by a bureaucratically managed, unresponsive and supply-led system of higher education provision. In contrast, the new National Qualifications Framework (NQF) – which was formally established by the South African Qualifications Authority (SAQA) Act of 1996 and supported by the NCHE – attempts to resolve all of these constraints by allowing progression and diversity through its credit accumulation and transfer capabilities. The NQF espouses a philosophy of lifelong learning that envisages learners enrolling for modular components of programmes at differing sites of provision and at different moments in their learning lives. These learners will accumulate a flexible combination of credits over time that will eventually earn them the award of a qualification.

A programme-based definition of qualifications is founded on the notion that a programme rather than an institutional focus will result in a greater permeability and articulation across the trinary divides within higher education, thereby promoting progression and diversity of provision.²⁸ A ‘programme’ is a course offering available at multiple institutional sites of provision using multiple modes of delivery (distance, contact and open learning), and made up of multiple credit units which can be accumulated by learners over time. These units entail both academic and vocational foci which, when combined holistically in a qualification, create a more career-oriented or professional set of competencies which have immediate currency in the labour market and which enhance employability.²⁹

The South African interpretation of ‘programmes’ as described above captures many of the new structural features of contemporary HET systems identified by Scott and Gibbons *et al.*, including: shifts from courses to credits, from departments to programmes, from subject-based teaching to student-based learning, and from knowledge to competence.³⁰

The emergence of Mode 2 research

The fifth and final category of recommendations made by the NCHE comprises its overview of

African HET. The two most important of these are: whether Mode 2 research benefits the social reconstruction and development of post-apartheid South Africa; and whether the so-called marketisation and commercialisation of knowledge in HET institutions is indeed a valid observation, and if so, to what extent Mode 2 research accentuates this problem.

The beneficial impact of Mode 2 on social reconstruction and development

Competing views are held regarding the benefits of Mode 2 for social reconstruction and development in the post-apartheid period. Kraak³⁴ is relatively optimistic about the impact of Mode 2 research on social reconstruction and development. He maintains that the process of social reconstruction and development in South Africa provides perfect opportunities for Mode 2 research practices. In the radically changed social relationships ushered in by the new

'mix' ... might combine:

high-tech solutions in new materials, processes, information systems, and/or delivery designs; with

commonly available local materials, personal interface between deliverer/provider and beneficiary, and community participation in design conception, problem solving and decision making.

All this means that there will be increased demand for a whole array of applied scientists, engineers and technologists (for instance surveyors, engineers of various types, and architects) with university training.³⁵

The FRD today forms part of the National Research Foundation (NRF) which is the main research funding agency in the country. The adoption of the above approach to applied research alongside the new government's insatiable need for research information on society's developmental needs has led to a proliferation of Mode 2 consultancies and research reports commissioned by government departments at national, provincial and local levels, with participants recruited from the science councils, NGOs, universities, state departments and neighbouring communities. This body of research has primarily been aimed at solving acute social problems in the education, health, welfare and developmental fields.

The marketisation of higher education

A second position regarding Mode 2 is much more critical. This has to do with its alleged contribution to the marketisation of HET and the commercialisation of knowledge production. Subotzky³⁶ summarises the main characteristics of this emergent 'marketisation' of the HET sector as entailing:

the commodification of knowledge and the privatisation of intellectual property rights by corporations;

research increasingly funded by non-statutory, privately commissioned sources;

an emphasis on science and technology fields rather than on research that is not commercially viable;

technology transfer through business-university research partnerships, consortia and specialist units, leading to proprietary intellectual rights; and

a prevailing culture of entrepreneurialism and managerialism which is in direct tension with the collegiate culture of academia.

This perspective is clearly the dominant one in the knowledge production and HET literature. At an international conference held at the University of Massachusetts (Amherst) in September 1999 entitled *Re-Organising Knowledge: Transforming Institutions, Knowing, Knowledge And The University In The Twenty-First Century* the dominant view supported by the majority of papers was the notion of an epochal shift in the role and function of the university. The key features of this characterisation entailed a transition:

away from the idea of a university in its traditional liberal formulation as a ‘house of knowledge’, detached from the larger society to pursue pure disciplinary research and higher learning in a state unhindered by the narrow interests of government and business to a conception of the university in the service of the market, where intellectual labour has become commercialised, serving primarily the innovation demands of the new global knowledge economy.

In short, the traditional role of the university had evaporated leaving the ‘house of knowledge’ in a state of crisis. The work of Sheila Slaughter, an internationally acknowledged expert on HET and keynote speaker at the conference, confirmed the dominance of this view. She is co-author with Larry Leslie of the recent seminal book, *Academic Capitalism: Politics, Policies, and the Entrepreneurial University*. Her main thesis is that the commercialisation of the academy will lead to the decline of the canonical tradition itself, the weakening of the professorate and scholarly research, and the triumph of a managerial mode of control in the university not unlike that of corporate capitalism.³⁷

Conclusion

Even though dominant, the largely pessimistic ‘marketisation’ view as described above has its own limitations. It greatly exaggerates the extent of rupture and misses the high degree of continuity within higher education from the past to the present. The new developments associated with ‘the entrepreneurial university’ do not constitute an epochal change from one social structure to another. For example, the university has always played a highly functional role in the development of capitalism and has always served the occupational structure with a skilled and

appropriately socialised labour force. Not much has changed in this regard. The process has simply intensified because knowledge itself, and not simply skilled human capital, is now also a key commodity in the capitalist production process.

It is an approach that fails to see the positive changes that have accompanied the transition to Mode 2. Indeed, another element of the Scott and Gibbons *et al.* thesis outlined at the beginning of this article is the argument that many HET systems world-wide have undergone a profound transition from what has been termed an 'elite' and 'closed' system to a more 'massified' and 'open' HET model. This transition includes changes such as: the increased 'lifelong learning' enrolments of adult learners who require retooling because of the new knowledge demands in the world of work; a greater democratisation of access to HET and the subsequent increase in participation rates in many developed and newly industrialised societies since the 1960s; and finally, a massive expansion of access because of the advances made by the new telecommunications technologies which enable new forms of higher learning opportunities using distance education, satellite-driven telematic education and open learning methodologies. This democratisation of HET has occurred alongside the transition to Mode 2 research and is entirely missed by the marketisation argument.

The jury is not yet out on the final impact of all of these developments in higher education. However, if correctly steered and regulated, the most optimal trajectory would be a HET policy environment that promotes both the institutional (equity) and the research mode (developmental) imperatives simultaneously. This would be a framework that encourages: the growth of Mode 2 problem-solving research aimed at solving acute social problems; the establishment of partnerships between higher education institutions and other key stakeholders in society such as business and NGOs; and finally, the expansion of enrolments of previously excluded communities. This is the social and economic development challenge that lies ahead for post-Apartheid South Africa in the higher education realm.

¹ See also Michael Gibbons, Higher Education Relevance in the 21st Century, paper prepared for the UNESCO World Conference on Higher Education, Paris, France, October, 1998; and Peter Scott (Ed), *The Postmodern University?*, London, Open University Press, 1998.

² For further analysis of globalisation, see Michael Piore and Charles Sabel *The Second Industrial Divide: The Possibilities for Prosperity*, New York, Basic Books, 1984; Marc Maurice, Francois Sellier and Jean-Jacques Silvestre *The Social Foundations of Industrial Power*, London, MIT Press,

1986; Michael Dertouzos, Robert Lester and Robert Solow *Made in America: Regaining the Productivity Edge-the MIT Commission on Industrial Productivity*, Boston, MIT Press, 1989; David Harvey *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change*, Oxford, Blackwell, 1989; Wolfgang Streeck *Social Institutions and Economic Performance: Studies of Industrial Relations in Advanced Capitalist Economies*, London, Sage, 1992; Richard Locke, Thomas Kochan and Michael Piore *Employment Relations in a Changing World Economy*, Cambridge, Mass, MIT Press, 1995.

³ Basil Bernstein *Pedagogy, Symbolic Control and Identity: Theory, Research and Critique*, London, Taylor and Francis, 1996.

⁴ Scott, 1995, p. 178.

⁵ Ibid., pp. 74-75.

⁶ Ibid., p. 76.

⁷ Ibid., p. 79.

⁸ The key South African government policy texts that are referred to include the following: National Commission on Higher Education (NCHE) *A Framework for Transformation*, Department of Education, Pretoria, 1996; Department of Education (DoE) *Green Paper on Higher Education Transformation*, Government Printer, Pretoria, 1996; Department of Education (DoE) *Education White Paper Number Three: A Programme for the Transformation of Higher Education*, Government Printer, Pretoria, 1997; and Republic of South Africa (RSA) *Higher Education Act*,

NCHE, 1996, pp. 15-16.

¹¹ These three pillars, as well as other aspects of the NCHE report, have been carried through to both the Department of Education's Green Paper (DoE, 1996, pp. 15-16) and White Paper on HET (DoE, 1997, p. 10), and many have found a place in the *Higher Education Act* (avoid duplication, this analysis concentrates on material from the NCHE report.

¹² NCHE, 1996, p. 76.

Ibid., p. 76; Also DoE, 1996, pp.18-19.

¹⁴ NCHE, 1996, p. 5.

¹⁵ Ibid., p. 8.

¹⁶ Ibid., p.76.

¹⁸ Ibid., p. 89.

¹⁹ Ibid., p. 2.

Ibid., p. 112.

²² Ibid., p. 112.

²⁴ Department of Education (DoE) *Higher Education Institutional Plans: An Overview of the First Planning Phase*, Government Printer, Pretoria, 1998, p. 3. NCHE, 1996, pp. 85, 102-103, 165.

²⁷ NCHE, 1996, p. 85. 28

Ibid., p. 86.

Scott, 1995, pp. 74-79.

NCHE, 1996, pp. 125-126; See also DoE, 1996, p. 35 and DoE, 1997, p. 31. NCHE, 1996, p. 126.

³³ Ibid., p. 127. 34 Andre Kraak, Investigating New Knowledge Production: A South African Higher Education Survey, in Andre Kraak (Ed) *Changing Modes: New Knowledge Production and its Implications for Higher Education in South Africa*, Human Sciences Research Council, Pretoria, 2000. 35 Foundation for Research and Development

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³⁶ George Subotzky, Complementing the Marketisation of Higher Education: New Modes of Knowledge Production in Community-Higher Education Partnerships, in Andre Kraak (Ed) *Changing Modes: New Knowledge Production and its Implications for Higher Education in South Africa*, Human Sciences Research Council, Pretoria, 2000.

³⁷ Sheila Slaughter and Larry Leslie, *Academic Capitalism: Politics, Policies and the Entrepreneurial University*, Baltimore and London, Johns Hopkins University Press, Slaughter & Leslie, 1997.