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South Africa is in a process of major economic, political and educational transition. Economically, growth has slowed along with the world economic recession. Political contestation has become more marked both within the ruling party and outside it. Deep-rooted dissatisfactions with the negligible impact of change on communities' everyday lives are manifested in increasing protest action. In this context, the shortcomings of the education and skills regime have come under the spotlight. The post-election government has highlighted these as major priorities. It seems timely to initiate a process of ongoing analysis of unfolding developments in education, skills development and innovation.

Part 1 of this review provides a birds' eye view of developments in education before and after the election. Part 2 considers risks and opportunities of shifting skills development from labour to education. Part 3 examines a new kid on the (policy) block: regional innovation systems and strategies.

CONTENTS



**Tshilidzi
Netshiangani**
on Education,
p 1.



Jocelyn Vass
on Skills
Development,
p 4.



Jo Lorentzen
on Innovation,
p 8.

PART 1: EDUCATION: CHANGES AND CONTINUITIES PRE AND POST-ELECTION 2009

Tshilidzi Netshiangani

INTRODUCTION

In the first few post-election months with which this review is concerned, there were no major new policy shifts - perhaps the most important visible change was the split of the Department of Education into the Departments of Basic and Higher Education. Dr Blade Nzimande, chairperson of the South African Communist Party, was appointed as the Minister of Higher Education and Training, and Angie Motshekga, the former MEC for Education in Gauteng, became the Minister of Basic Education, with Enver Surty as her Deputy. The President, Jacob Zuma, demonstrated the priority attached to education, by personally addressing 500 school principals on their priorities. While the change in administration resulted in a temporary hiatus, there were policy continuities before and after the elections in May.

SCHOOLS

The major challenge in education for the new administration was to improve the overall level of professional, social and technical skill and ability among the majority. How this was to be achieved was spelt out in the Education Roadmap (see later) and ANC policy documents - they focused on a combination of initiatives that focused on schools and social mobilisation, including a mooted compact with the teacher unions.

On assuming office, however, the new ANC administration began with splitting the Department of Education and creating a new Department of Higher Education. Whereas the Department of Basic Education includes all schools from Grade R to Grade 12, as well as adult literacy programmes, the scope of the new Department of Higher Education and Training will cover all public and private higher education institutions, colleges and the skills development sectors, which include the Sector

From page 1

Education and Training Authorities (SETAs) and the National Skills Authority and the National Skills Fund. This ministry will also coordinate the National Human Resource Development Strategy. The creation of this new Department requires considerable reorganization within government and a refocusing of energies inwards, towards the reorganization of personnel. Whether such restructuring will ultimately yield and result in the changes called for in the Roadmap remains to be seen. Some of the limitations are discussed in Part 2 of this Review.

The Roadmap acknowledges the multi-faceted character of the challenges and nature of interventions required. It signals the importance attached to educational improvement. Poor quality of outcomes was constantly in the public eye before the elections. One of the major areas of contestation before and after the elections, as it is every year, were

matric results. The debate around matric provides an annual opportunity for soul-searching around the causes and solutions to poor educational outcomes.

In 2008, the publication of matric results were preceded and accompanied by ongoing debates about whether outcomes-based education, **OBE**, the philosophy of education underlying the curriculum, was responsible for alarmingly low levels of achievement or not. Former UCT Vice Chancellor Mamphela Ramphele created a stir when she called for the death certificate of OBE to be issued. Responses following these statements highlighted different understandings of what OBE is and different assessments of what needed to be done. Is the problem the philosophy underlying the curriculum, the curriculum itself or issues related to context and resources, including human resources manifested in teachers and departmental officials? Whereas some saw the underlying problem as being OBE, others saw the approach and goals as uncontroversial but curriculum implementation as being in question. (See for example *Mercury* 2008/12/08; *The Witness* 2008/11/28; *The Witness* 2008/11/25).

The debate raged for several weeks before

the Minister of Education and SADTU, the two most important role players in the debate, rejected the view that OBE was the problem and should be abandoned. (*Business Day* 2008/11/22; *The Star* 2008/11/17). Instead, the Minister indicated that she would be taking steps to review implementation of the curriculum revised in 2002 and introduced in 2004.

This **curriculum review** was taken up in June 2009, when the Department of Basic Education announced the establishment of a Ministerial Committee to examine how implementation of the National Curriculum

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Statement could be strengthened¹.

According to a Council of Education Ministers announcement on the 2nd October, the report proposes changes which will create more time for learning and teaching in the curriculum. Key recommendations include the discontinuation of learner portfolios, reducing the number of learning programmes from eight to six, giving priority to English as a first additional language, reasserting the importance of textbooks in schools and more targeted training for teachers. Some of these recommendations dealt body-blows to the basic principles of outcomes-based education. Minister Motshekga will make an announcement at the end of October on the response of the Department to the recommendations. It is likely that she will endorse them with some modifications and a timeframe for implementation.

Was OBE responsible for what happened around matric 2008? Earlier in 2009, Minister of Education, Naledi Pandor, had appointed a panel to investigate late publication of 26000 **matric results** and claims that there were disproportionately high numbers of **maths passes** (*The Star* 2008/12/29; *Business Day* 2009/01/06; *Business Day* 2009/01/07; *Independent Newspapers* 2008/11/26-30). The class sitting for matric in 2008 was the

first to have experienced their entire schooling through the post-apartheid curriculum; their success or failure was seen as evidence of the success or failure of the new curriculum. On the 21 Jan 2009 the Department of Education presented its Technical Report on the 2008 National Senior Certificate Results to the Parliamentary Portfolio Committee (PMG 2009/01/21)². It provides more specific reasons for problems experienced than the broad issue of OBE. The report highlights and calls for several areas that need improvement in the 2009 National Certificate Examination: the inconsistent standard of exam papers, weak systems for managing, capturing and controlling school-based assessment marks, slack invigilation procedures, poor quality markers and poorly trained personnel to manage computer systems dealing with results. In short, reading between the lines, it seems that results were compromised because systems for marking, capturing and analyzing results are compromised by the quality of personnel responsible for these tasks. The consequence is inaccuracies in results and lack of timeliness in publication.

The furore around the matric occurred in the months leading up to the elections and in the context of campaigning by political parties. (*City Press* 2009/04/19). But the document that commanded most attention prior to the election was what became popularly known as the **Education Roadmap**. This Roadmap is significant as it constituted what has come to be seen as the ANC Education Manifesto and the basis for action post-election. The Roadmap emerged out of a process steered by the DBSA's Education Specialist, Graeme Bloch, and came into being following a meeting on 25 July 2008 between Jay Naidoo (DBSA chair), Zweli Mkhize (ANC Education and Health subcommittee) and Naledi Pandor (Minister of Education). Those participating in the process of drawing up the Roadmap included SADTU, NAPTOSA, ANC NEC subcommittee on Health and Education, the Minister of Education, National Department of Education, provincial departments, DBSA, HSRC, School of Education (Wits), CEPD, EPU, National Treasury, academics, NGO's and training institutions.

The **Education Roadmap** highlights ten

1. The Committee consists of departmental officials, curriculum researchers, and teacher unionists. They include DoE DDC, Penny Vinjevold, UCT educationist and former HSRC researcher Ursula Hoadley, NAPTOSA's Sue Muller, textbook writer and publisher Fatima Dada, maths educator and UMALUSI Council Chair, John Volmink, Tshedi Dipholo (SADTU), and Elspeth Khembo from Wits.
2. This report was written by a ministerial committee chaired by NSP Sishi (DoE) and including JPC Basson (SAQA), JPK Lotter (HESA), RJ Mello (SADTU), RJ Burger (SAOU), AM Raubenheimer (Gito Council), RR Poliah (DoE) and AJ Van Rensburg, a specialist on Certification and Information Technology.

From page 2

EDUCATION ROADMAP INITIATIVES

In-school:

1. Teachers to be in-class, on time, teaching. Teachers must also be required to use textbooks in class.
2. Focus efforts on improving the quality of early childhood education and primary schools, including implementing the 'Foundations for Learning' Campaign emphasizing the promotion of language and numeracy.
3. Conduct external tests for all grade 3 and grade 6 learners every year, and provide the results to parents.
4. Ensure effective evaluation of all teachers based on the extent to which learner performances improve, with results influencing the Occupation Specific Dispensation pay for teachers.
- 4.1 Enhance recruitment of quality teachers and strengthen teacher development Offer bursaries to attract quality student in-take into teacher training institution and offer student loan repayments to attract young graduates into teacher contracts.
- 4.2 Enhance pre-service and in-service teacher training, including through better coordination and resourcing.
- 4.3 Ensure that teacher unions have a formal and funded role in teacher development.

School support :

5. Strengthen management capacity to ensure working districts and schools. This entails bringing in management capacity from the private sector, civil society and elsewhere in the public sector.
6. Phase in a process of measurable improvements through targeting efforts at selected education districts and dysfunctional schools.
- 6.1 Use of infrastructure budgets as an incentive for schools that deliver improved teaching and learning.
- 6.2 Increase the use of ICT in education, including audiovisual teaching materials in the classroom to supplement teaching and demonstrate quality teaching to learners and educators.
7. Improve national-provincial alignment and efficiency of education expenditure, through procuring textbooks nationally and allocating resources to improve district capacity. In this regard, the use of conditional grants is an important tool to ensure alignment.

Societal :

8. Develop a social compact for quality education. This will include a National Consultative Forum dedicated to clarifying the "non-negotiables" and performance targets for key stakeholders, and the monitoring thereof.
9. Mobilisation of communities at all levels should be encouraged to raise awareness and participation in education issues. Examples include graduates assisting their former/ dysfunctional schools to assist, corporate social investment, party branch campaigns to clean up schools, and supporting food gardens, and encouraging young graduates to enter teaching ("Teach SA").
10. Implement poverty combating measures that improve the environment for learning and teaching, such as a nutrition programme (cross-cutting programme with health), basic infrastructure for schools, and social support for children.

initiatives to be taken to improve quality in school, school support and societal initiatives. (Bloch, 2009:33)

The Roadmap did not ultimately endorse the call for the issuing of the death certificate for OBE. Its focus was mainly on improving accountability and social mobilization to improve educational outcomes, suggesting that these issues, rather than OBE, are the nub of the problem in education. In relation to improving accountability, it did however endorse Naledi Pandor's attempt to reinstate a form of inspectorate through the appointment of the **National Education Evaluation and Development Unit (NEEDU)** Ministerial Committee chaired by Prof Jonathan Jansen. Pandor was to consider the recommendations of the final report of the committee, in consultation with all relevant

stakeholders, and make an announcement in this regard. Shortly after Motshekga took over as Minister, Ronnie Schwartz, former Director-General of Education in the Western Cape, was appointed to explore its realization. The Roadmap also endorsed the focus on teacher development promoted by the unions. A **National Teacher Development Summit** including the Department and teacher unions was held on 1st and 2nd July. Among the major outcomes of this summit was a declaration committing the role-players to a national plan for teacher development that would include separating pay from performance in the assessment of teachers and investigating the feasibility of re-opening teacher education colleges.

HIGHER EDUCATION

One of the first issues with which Nzimande

had to deal as new Minister of Higher Education was the **Universities Racism Report**. Following an incident at the University of the Free State where white students had videoed the humiliation of black female workers by forcing them to drink the young men's urine, Naledi Pandor had appointed a Ministerial Committee in March 2009 to investigate racism in higher education and to make appropriate recommendations to combat discrimination and to promote social cohesion.

The Soudien report³ revealed that racism and sexism are pervasive in higher education institutions. It showed that there is a major disjuncture between institutional policies and the real-life experiences of staff and students. This disjuncture appears to be the result of poor dissemination of information pertaining

3. The committee comprised of Prof Crain Soudien (UCT's Acting Deputy Vice-Chancellor and Chairperson of the Committee), Dr Wynoma Michaels (Chief Programmes Officer at iGubu Leadership Agency, Cape Town), Dr Sankie Mthembu-Mahanyele (Deputy Secretary-General of ANC), Prof Mokubung Nkomo (professor of education at the University of Pretoria), Ms Gugu Nyanda (DoE), Mr Nkateko Nyoka (CEO of ICASA), Prof Siphon Seepe (Director of GIMT), Dr Olive Shisana (CEO of HSRC), Dr Charles Villa-Vicencio (from the Institute for Justice and Reconciliation). They were supported by DoE officials, Mr Ahmed Essop and Dr Molapo Qhobela, Ms Babalwa Ntabeni and Dr Chika Sehoole (DoE Media statement, 2009/10/06).

From page 3

to policy, limited awareness of policies, lack of awareness of the roles and responsibilities pertaining to implementation that flow from the policies, and lack of institutional will. The report also noted that there was lack of consensus and/or of a common understanding of what those policies actually involved (Soudien, 2008). The committee recommended that the Minister should consider establishing a permanent oversight committee to monitor the transformation of higher education. This committee should submit an annual report to the Minister, who should make the report available for public discussion. After the Universities Racism Report was released, the comments mainly focused on the recommendation that each student should do a compulsory course on "Africanness". Blade Nzimande, the minister of higher education, thinks it's a good idea too and he expressed concern about racism in tertiary institutions (*Sunday Times* 2009/05/17). The report also tabled comprehensive recommendations with regards to Staff Development, Student Learning Needs, Student Achievement, Student Accommodation Needs, Knowledge, Governance, and Student Accommodation. The general recommendations were that consideration be given to the development of a transformation compact between higher education institutions and the DoE.

Other issues that confronted Nzimande were those of Further Education and Skills Development and the National Student

Financial Aid Scheme (NSFSAS). Nzimande prioritized colleges and the 100 technical schools that have not yet been recapitalized. The SETAs, which also now formed part of his remit, are dealt with by Vass (see later). The **Budget speeches** of 2009 by both the Ministers of Basic Education and Higher Education and Training were presented to both the Portfolio Committees for Basic Education and for Higher Education and Training on 30 Jun 2009 (PMG 2009/06/30). Both showed considerable continuity with past policy emphases.

In the first few months after the elections in 2009, the two new Ministers settled into their new portfolios. The first major challenge to both Ministers was in August with the leaked national **Benchmark Tests Project results** conducted by HESA. These purported to show that students coming to universities were poorly prepared for universities and showed extremely limited proficiency in basic numeracy and literacy. These test results differed markedly from matric results, showing a radical poverty of literacy and numeracy among school-leavers. Who or what was to blame again immediately became the focus of debate. In effect, however, HESA had revealed not only persistently poor schooling outcomes, but also that higher education was no longer relying on matric results for giving students entry to universities. They were now setting their own entry tests. Poor schooling outcomes and their impact on all aspects of the system will remain the critical challenge

for both Ministers of Education for the duration of their terms.

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RISKS AND OPPORTUNITIES IN SHIFTING SKILLS DEVELOPMENT FROM LABOUR TO EDUCATION

Jocelyn Vass

INTRODUCTION

On the 10th of May 2009, shortly after the April election, the new cabinet announced that the responsibility for skills development and the SETAs (Sector Education and Training Authorities) will shift from the Department of Labour (DoL) to the newly established Department of Higher Education and Training (DoHET). This shift is not historically neutral, given the "disarticulation" in the skills

development agendas of Department of Labour and the previous Department of Education (McGrath & Badroodien, 2005). To outsiders familiar with the uneasy relationship between education and skills development, it may appear that at long last education has prevailed.

However, the newly appointed Minister of DoHET, in his maiden Budget speech, argued

for "a diverse and differentiated post-school system" providing "diverse learning opportunities for youth and adults" through the "improved alignment of the university, college and SETA system" (Nzimande, 2009). Thus, on the face of it, the joining together of these three complex and widely criticised systems increases the potential for much needed coordination and articulation between further education (FE), higher education (HE)

From page 4

and workplace-based skills development. Interestingly though, this major policy shift has elicited very little public comment, even from constituencies such as the SETAs, organised business and labour, all of which are likely to be greatly affected. There are potential risks as well as opportunities to this change, as it is not just likely to be an adjustment or "tweaking" of policy, but to represent the seeds of a substantive policy sea change. This may be the case, especially when the shift is posed against an adverse economic climate and widespread perceptions that all three sub-systems are dysfunctional in their economic and social outcomes. Also, post-apartheid skills development is, 10 years since inception, at a critical point in its learning curve, at strategic, policy and institutional levels. Here we seek to contribute towards a discussion on how to realise the theoretical potential for alignment and effective coordination in the education-skills development continuum.

THE IMPACT OF THE ECONOMIC RECESSION

The relocation of skills development takes place against a multiplicity of external and internal dynamics, which in combination may test the skills development landscape perhaps, as never before. For the first time in 17 years and since democracy, South Africa is experiencing a major recession. Since the last quarter of 2008, the average GDP growth rate declined from 5% to 3%, insufficient to meet key social and developmental goals to halve employment and poverty goals by 2014. Retrenchments and job losses are escalating as the declining economic demand (in domestic consumption and exports) resulted in the loss of 475 000 jobs in the first half of 2009¹. Commentators predict that skills development as a priority is likely to be a primary victim (*Star*, 31 March 2009) as employers cut expenditure on training. Skills levy payments are likely to decline (as a function of declining payrolls), potentially threatening the short to medium term financial stability of the SETAs and the entire NSDS (National Skills Development Strategy). The first 2 phases of the NSDS were implemented against gradual improvements

in the economy. Thus, gains made in the NSDS I (April 2000 - March 2005) and part of NSDS II (April 2005 - March 2007), such as a doubling of the training rate, improvements in training expenditure, greater inclusivity of small and medium enterprises may be reversed (Patterson et al, 2008). Significant increases in the learnership participation rate, heavily subsidised by the learnership allowance, may be at risk. The adverse effect of the recession adds to the uneven success rate across SETAs, especially those at the low skill end of the economy in the primary and secondary sectors.

Finally, shrinking finances apply to all three sub-systems and open up the risk of contestation about revenue sharing. This is evident from the wary business response to

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the possibility of levy income (through the SETAs and National Skills Fund [NSF]) being used to partially finance HE and FE, following comments by the Minister of HET (Nzimannde, 2009b). In light of the slow progress in private sector compliance to the levy system, a major rethink (especially in the short-term) on allocations across the sub-systems, is fraught with legal and institutional complexities.

THE INTERNAL LEARNING CURVE OF THE NSDS

The NSDS architecture is at a critical and vulnerable point in its 10-year learning curve, which is anticipated to result in a major strategic, policy and institutional rethink. Since April 2007, the SETAs have been preparing for NSDS III (April 2010 - March 2015), including the consideration of a restructured SETA institutional and governance landscape. Chances are that sober-minded reflections on the lessons on policy and implementation over the first two phases are likely to be obfuscated by considerations over the bureaucratic details of relocation and resources, thus shrinking the space for building policy continuity and alignment in the short to medium-term.

Major legislative reforms through the National

Skills Development Amendment Act 37 of 2008, (DOL 2008) with regard to artisan development and quality assurance through the envisaged Quality Council for the Trades and Occupations (QCTO) have also taken progression within and articulation between occupational-based skills development, further and higher education to a new, and as yet untested level. For all the opportunities for alignment, the survival of the QCTO and policy amendments under the new DoHET regime is unclear.

These changes are all taking place against the five-yearly policy transition from the NSDS II to NSDS III (April 2010 - March 2015) and the development of a new HRDS-SA (Human Resource Development Strategy of South Africa). Thus, only 10 years since its inception,

the NSDS landscape and architecture is at the peak of a very steep learning curve in assessing the lessons learnt about the limits and quality of its policy

development, implementation, institutional and governance capacity.

THE "THIRD CLASS" STATUS OF SKILLS DEVELOPMENT

Late developing economies accord academically oriented post-secondary education higher social status than technical, vocational and skills development by communities (ILO, 2008: 49), the education system and the labour market. Thus, despite an express wish for a more skilled and productive workforce, in post-apartheid South Africa, access to higher education remains first prize for both poor, Black and well-off youth, while further education (and now skills development) provides a "second chance" for poor Black youth who fail to enter or complete higher education. This is partly because the language of redress is still overwhelmingly geared towards the development of the Black middle class, with academic learning being a key point of access. Also, in both the public and private sector labour market, the returns to higher education are still substantially higher relative to Matric, further education and workplace-based skills development.

The risk of the continued relegation of the

1. As part of the National Jobs Initiative, a training layoff scheme of R2.5 billion, co-funded by the NSF and the UIF, will subsidise wages for (up to 3 months) of workers whose firms are considering retrenchments.

From page 5

importance of the SETA system, when compared to FE and HE, lies in a number of factors. Firstly, just under two-thirds of the learnership system is at NQF 1-3, level, 22% is geared towards intermediate NQF 4 level, while only 14% at NQF 5-7 (Kruss et al, 2008). Thus, the SETAs tend to train at lower skill levels, unlike HE. The learnership impact study also showed that learnerships appeared to present a "second chance", as 71% of learnership participants entered with a NQF level 4 schooling. Thus, for those learners with a matric qualification, who could not get into the more prized university stream, getting a learnership provided another attempt at employability. Secondly, the lack of articulation of qualifications and the lack of recognition by academic providers of the educational value of work experience (mostly provided through the SETAs, non-standardised entry requirements in HE, reinforce continued silo-like operations across FE, HE and the SETA system. Finally, the relegation of occupationally directed learning by the SETAs, including "artisan training and scarce skill development

PRODUCTIVITY AND DECENT WORK

There is a distinctly labour market cast to the development of the National Qualifications Framework (NQF) and the subsequent NSDS (Bird, 2009), in the struggle by COSATU trade unions to provide for portable and transferable skills to reduce the vulnerability and displacement of Black workers due to discrimination and sectoral employment shifts.

The idea was for older Black workers (who were deprived of schooling due to apartheid) to have another chance at progression, and engage in a process of lifelong learning, from NQF level one and upwards. Further, a cornerstone of the new approach was to boost and develop enterprise-level training, now manifested in the proliferation of private (often enterprise-based) service providers of skills development, alongside public education providers, including universities and colleges. The DoL as the primary mediating state agency, was supposed to be a "one-stop shop" to facilitate the "virtuous circle" (ILO, 2008:v) of improved skills, increased

which has marginalised worker priorities in skills development. Thus, commenting on the role of labour in the "failures of the SETAs", the Secretary-General of Cosatu reflected on "Cosatu's ability to bang the doors until they open, then fail to walk through" (Vavi, 2009). However, the long-term potential of integrating skills development as an active factor in achieving broader labour market gains may be derailed, as the nominal labour market connectedness as presented through the labour market function of the DOL, will be absent to an even greater extent.

The public perception that the SETA system has been a failure is widespread, but it fails to consider its relatively short lifespan compared to that of HE and FE. There is a disproportionate foregrounding of its weaknesses and a dismissal of the successes (albeit uneven) of the system. A "take-over" approach or a rescue mode may limit the extent to which a more nuanced evaluation of the SETA and NSDS experiences of the last ten years becomes part of the relocation process. There is a rich source of existing evaluative information from which to gather recommendations, including the NEDLAC and SETA reviews, the recommendations of the National Skills development Conference held in 2008, and many others.

In summary, there are serious risks that could undermine the potential for learning from the last 10 years of skills development in a considered and dispassionate manner given the prevailing external and internal environments. The next section explores the extent to which there is space for finding and expanding possible areas of commonality and cooperation.

OPPORTUNITIES FOR SYSTEMIC COHERENCE AND COORDINATION

The joining together of the three sub-systems is not preceded by effective working models of coordination and alignment. Thus, being under one institutional roof, the former Department of Education, did not result in systematic collaboration between the HE and FE sectors (Stumpf et al 2009). For all the improvements in each of the three sub-systems, evidence abounds to show that systemic incoherence and disarticulation has contributed to a lack of responsiveness to the developmental needs of society as well

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programmes", to about 20-30% of headcount enrolment at FET colleges (Stumpf et al, 2009, Parliamentary Monitoring Group [PMG], 2009), illustrates another disarticulation, that between FE and skills development.

In Parliament, DOE officials argued that the soon to be defunct N-level qualifications (N1-N6), were "relatively narrow, but were sufficient for students who were content to remain at the artisan level" (Parliamentary Monitoring Group [PMG], 2009). Finally, in making "quality education and skills development" its key priority, the Medium Term Strategic Framework (MTSF) (2009:27) places emphasis mostly on the role of FE and HE in post-secondary education to strengthen "the skills and human resource base". In fact, the MTSF identifies the FET colleges as the "primary site for skills development training" with not even a passing reference to the SETAs (MTSF, 2009: 27).

THE "VIRTUOUS CIRCLE" OF SKILLS,

productivity, increased profits, employment and increased returns to workers, in the quest for decent work, an ILO convention adopted by South Africa.

The ILO argues that the principle of decent work can be achieved through , "effective skills development systems - which connects education to technical training to labour market entry to workplace and lifelong learning, to[can] help countries sustain productivity growth and translate into more and better jobs" (ILO, 2008: v). While this was the policy intent, the internal DOL operation for the last 9-10 years has been silo-like, in that there was little integration between skills development and the quest for employment equity , improved productivity² and improved wages. Further, an often neglected contributory factor is the virtual abdication by organised labour of the NSDS and the SETA system to business, SETAs and the state,

2. Projects by Productivity SA to promote and measure the impact of skills development on productivity have been established.

From page 6

as the economy. While there is great merit in the argument that warns against "reducing education simply to education for jobs" (Nzimande 2009a), being responsive to the economy and society does not reduce education necessarily to mere "assembly lines for the market". Indeed, the relatively poor learning and employment outcomes of the entire education and skills development system are an indictment of the other extreme, that is an overwhelmingly supply-driven approach. Thus, the adage that "when elephants fight, it is the grass that suffers".

THE POTENTIAL FOR SHIFTING FROM "PARALLELISM" TO EMBEDDED ARTICULATION"

The relocation does present the potential that in the shift towards a more knowledge-intensive society and economy, the rationale for education and skills strategies may return to the principle of lifelong learning in conjunction with one another, instead of parallel to one another.

Carneiro (2002) refers to the "virtuous triangle of [lifelong] learning" in exploring the nuances of linking academic, vocational and experiential learning for sustainable employability. He (Carneiro, 2002) argues that given constant shifts in knowledge and knowledge patterns, education and skills development need to be adaptive, in balancing the dialectical relationships among academic ("know what"), academic & vocational ("know why"), vocational & experiential ("know how") and experiential ("know who") forms of learning.

Central to all is a conscious decision to level the playing fields, and acknowledge the relative contribution and strengths of each of the three sub-systems so as to create an environment of trust and cooperation, instead of competitive rivalry. This is implicit in a statement by Minister Nzimande which argues for a process of joining together, "without sacrificing the specific contribution of each" (Nzimande, 2009a).

At the same time, albeit in reference to the manner in which the mandates of the Department of Labour and former Department of Education are articulated in the draft HRDS-SA, Bird and Heitmann (2009) argue for "inter-dependency" rather than "parallelism".

However, while the material conditions requiring inter-dependency among the three systems do exist, parallelism has prevailed in practice.

Perhaps then the argument is to gradually work towards "embedded articulation" in planning, implementation, monitoring and evaluation processes of a set of selected priorities, instead of wishing for overnight systemic coherence. Fundamental to this is a process of peer accountability (a la JIPSA), where the successes of one part of the system (on selected priorities) are dependent on another part of the system. This is partly facilitated by the fact that the NQF system is shared among FE (levels 2-4), HE (levels 5-10) while skills development cuts across the entire framework.

There are national plans for HE (2001), FET (2008) and the SETAs, each with a vision,

However, while the material conditions requiring inter-dependency among the three systems do exist, parallelism has prevailed in practice.

objectives, indicators and strategies. But they all have very different traditions, in terms of governance, structures and funding models among others. But perhaps a re-look at all three systems, instead of only the new NSDSIII provides an opportunity to take a first stab at selecting a set of specific priorities to focus on in the process towards greater alignment.

Thus, responsiveness to each other may be built-in in the process of embedding interdependency, especially given the changed context. Specific opportunities of responsiveness and inter-dependency do exist.

External responsiveness to the National Industrial Policy Framework (NIPF) runs across all three sub-systems, and creates the first opportunity for joint and strategic planning. For all their weaknesses, the SETA system has had greater experience in assessing alignment with the NIPF, and may become a centralised repository of information and knowledge sharing on sector priorities and changes across the FE and HE system as well. Thus, instead of setting up parallel sector information systems, this may be located closer to business and labour for a more complex interrogation of the production and employment regimes within and across economic and non-economic sectors, within

the context of broader social priorities such as citizenship, identity and social cohesion.

A key stumbling block to graduation in FE and to a lesser extent HE is the inability of students to gain work experience as part of their qualification requirements. While it may be counter-productive to reduce SETAs and employers to being "labour brokers" in providing work experience to, and funders of HE and FE students, a comprehensive programme that integrates academic, vocational and workplace learning may be more forward-looking. Thus, work experience needs to be built-into the system, rather than being coincidental and dependent on the networking skills of individual learners and students, as is currently the case.

In this regard, realising the educational value of work experience through cooperation between the newly gazetted QCTO (Quality Council for Trades and Occupations) focusing on vocationally oriented qualifications, and quality councils for higher and further education, adds another layer to working towards inter-dependency principle.

The recent Conference on Education and Skills by Cosatu represents a welcome return of organised labour, as a credible participant in the education and skill agenda, but also key mover for alignment and coordination in securing learning and employment opportunities for both employed and unemployed.

In the longer-term, the key principle for building alignment and complementarities between education and skills development policy is "embedded inter-dependency". That is to develop a conscious and deliberate process of social, policy and institutional dialogue on theory and practice. This dialogue should be aimed at a degree of conceptual alignment on a set of priority policies. These selected priority policies would then require an institutional alignment (cross-border units for instance) to plan and implement policy. Importantly, this should be governed by planning, monitoring and evaluation mechanisms (not just a coordinating committee) that recognise, enforce and incentivise efficient and effective interdependence in policy conceptualisation

From page 7

and implementation, through financial, human and temporal resources. Thus, the focus should be on each function's contribution to the education and skills value chain.

In industry value chain analysis, the contribution of each agent along the value chain is measured and quantified. In the final JIPSA report, the authors claim that one of

and alignment at a conceptual, policy and implementation level on a small set of priorities that have been agreed on. Thus, the idea is to pilot working towards systemic coherence, but not alongside, but within the "real" system.

IMPLICATIONS AND CONCLUSIONS

In joining together independently minded universities (with their own internal schisms),

differentially by differing stakeholders and implemented incoherently.

In an ideal world, the coming together of these massive systems is supposed to deliver on the promise of an educated, skilled, productive and knowledgeable nation. However, in the real world, and given the risks and opportunities outlined here, this process is likely to be littered with victims, if not approached carefully. It appears that a multi-faceted and phased-in approach may be useful. This considered approach acknowledges that each system is at different points of their respective histories, social status and institutional reputations. They are also at different points in the learning curve in regard to their internal policy and practice, but also to the relationship among the systems.

In this case, the objective would be for this phased-in model to be the basis for medium to long term policy and implementation learning, and for the lessons to be absorbed and integrated into the entire system over time, rather than being a band-aid over the short term.

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the indicators of success for the initiative in achieving was the principle of "peer accountability", that brokered a partnership approach but also forced partners to "compete to excel" (JIPSA, 2008:). It further argues that peer accountability must be evidence-based and backed up by research. This will not be a coordination committee, but one with real authority and aimed at building coherence

a slowly recovering and comparatively minute FET sector, and a relatively new and oft-criticised SETA system, the risk of continued systemic incoherence (and thus "the grass suffering") is great. While there is definitely a case for joined-up policymaking (Kraak, 2005), this "parallelism" poses the risk of an artificial "stew" of priorities, objectives and indicators put together in a fragmented manner, owned



A NEW KID ON THE (POLICY) BLOCK: REGIONAL INNOVATION IN SOUTH AFRICA

Jo Lorentzen

INTRODUCTION

In June 2009, the Department of Science and Technology issued a Draft Regional Innovation Systems Strategy. The strategy aims to provide a framework for engagement in regional innovation systems development. It is currently being workshopped around the country, thus creating an opportunity to discuss how innovation at the regional level might best contribute to *A Better Life for All*, as the challenge was originally phrased in the 1996 White Paper on Science and Technology.

Innovation systems have so far entered the policy vocabulary in South Africa as the manifestation of something that happens at the national level. Both "NIS" (national innovation system) and "NSI" (national system

of innovation) have become household acronyms. But swapping the "N" for an "R" - much less understanding how the one relates to the other - is less widespread. So why does DST see the need for a consideration of regional innovation separate from national innovation?

There are at least three reasons. The first is that the South African innovation system is becoming mature enough both to afford and require more attention to what sort of innovative activities are happening in discrete local contexts. The second is that we know from economic history and theory as well as from current policy practice in other parts of the world that innovation is often an intensely local phenomenon. The third is that for

provincial and municipal officials to harness the power of innovation to affect the lives of their communities, they must understand the role of innovation in development, the problems innovative activities often face, and how they can be overcome.

FROM NATIONAL TO LOCAL: THE EVOLUTION OF SOUTH AFRICA'S INNOVATION SYSTEM

In the beginning South Africa's innovation system was a national construct. It was designed by policymakers and academic experts who definitely knew more about the country as a whole than about its constituent regions. This did not necessarily reflect any bias on their part rather than the state of play in the country in the second half of the 1990s.

From page 8

With limited resources of people and economic intelligence, it was easier for the two dozen or so key people involved in the formation of the NIS to design a system for the country from the top down as opposed to building it from the provinces up. The national economy was also much better understood than the provincial economies

In the beginning, there was a crazy looking guy in a lab... .

because information about the micro-determinants of enterprise behaviour, higher education strategies, and emerging industrial policies was available in an aggregate form but definitely not for lower spatial denominations.

It was really only in the current decade that such information became slowly available, and mostly for better resourced provinces such as Gauteng and the Western Cape. To this day we do not know much about innovative activities - both those that exist already and those that might exist if conditions were more favourable - in places that are outside the important metropolises. No one has heard of the enterprising farmer far away from the R&D powerhouses of the country who successfully experiments with new cultivars. And we know even less about innovative activities in the informal economy that have the potential to change the lives of many people especially in rural areas, because they often defy conventional notions that somehow all innovation results from scientific inputs: *In the beginning, there was a crazy looking guy in a lab... .*

The 2007 review of South Africa's NIS undertaken by the OECD does not mention regional dynamics either. Insofar as such reports are always largely based on background information elaborated by local experts, this is not surprising. On the other hand the OECD represents countries that pay a lot of attention to regional innovation. Their experience in this regard is epitomized in publications such as *Globalisation and Regional Economies: Can OECD Regions Compete in Global Industries?* (OECD 2007). Therefore the omission of such insights from the report is curious.

From the second half of the present decade,

there has definitely been more attention on innovation at the sub-national level. There was a push from the national level to try and understand better how its programmatic policies were reflected (or not) in provincial and local development strategies. For example, in 2006 the National Advisory Council on Innovation (NACI) commissioned a report on regional and local innovation systems which was published a year later. A cooperative agreement between South Africa and Finland, COFISA, provided mostly operational support to setting up infrastructure conducive to innovation in specific regions which were inspired by the successful Finnish experience in the 1990s. In response to criticism that the NIS had effectively disregarded its mission to advance technology for poverty reduction, NACI also tried to advance a better understanding of what it termed "broad-based innovation". This concept implicitly refers to poor people in peri-urban and rural areas which by definition shifts the conventional focus on high-growth spaces to more peripheral - and thus regional - areas.

At the same time provinces and cities made an attempt to understand their own spatial realities better. The South African Cities Network

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(SACN) started compiling regular information about socioeconomic indicators in the largest cities in the country. The Western Cape Provincial Government commissioned the OECD to undertake a so-called territorial review of the Cape Town city-region which was published in 2008. In parallel, the Gauteng provincial government partnered with Wits University in setting up the Gauteng City-region Observatory (GCRO) in Johannesburg. In 2009 the City of Cape Town awarded a contract to a consortium of researchers and industry representatives to study the conditions under which Cape Town could become a globally competitive city by 2020.

Not all of these new activities focus explicitly on innovation. Many mention growth, job creation, poverty alleviation, or service delivery

as their priority. But innovation matters to these objectives; it is difficult to conceive how they could be met in the absence of doing things differently and in new ways. This is but one reason why DST's initiative is to be welcomed.

INNOVATION IN WHAT SPACE?

Japan is good at making robots and automobiles. Italy is a world leader in ceramic tiles and silk ties. Finland excels in telecommunication hardware. What distinguishes these countries is their respective national innovation system. But the NIS isn't of much use when trying to understand the differential performance of two high-tech regions within the same country, such as Silicon Valley in California and Route 128 in Massachusetts (Saxenian 1994). Much like towns and cities and the landscapes between them do not simply aggregate into a "country", innovative activities are often intensely local. Therefore national innovation performance - the stuff measured through our own R&D and Innovation Surveys - is merely an average of vastly different experiences across local and regional levels. That space matters for innovation does not contradict the growing importance of global innovation networks. It simply suggests that the relevant nodes in

such networks are often local rather than national, or at times local within national. This has implications for policy because it means that a country may, on average, catch up while some regions within it do not. In other words, development is not an inevitable occurrence for every region in South Africa even if the country as a whole does well. It might never happen unless an explicit policy helps bring it about. So the emerging interest in regional innovation systems can be seen as policy activism against the differential distribution of innovative activities both within countries and across the globe.

Although there is no shortage of hit-and-run punters who sell the same meaningless slide show based on "best practice" in places that are occasionally as similar to us as the moon

From page 9

is to the earth, there is no one truth that unlocks regional innovation potential. What is likely to work is intensely reliant on the specific context for which policy is being designed. So one region's investment in logistics and infra-structure may be another region's facilitation of public-private forums to share information about likely or feasible technological trends. This underlines the importance of careful empirical investigation of the local reality - especially the determinants of firm dynamics - that must precede strategy formation.

Strategy is then about making choices and deciding on focus. Regional innovation systems can be broadly inclusive in their effects, but they cannot be everything to everybody. A group of economists advising the European Commission in a project entitled "Knowledge for Growth" recently advocated for "smart specialization".

A region that succeeds in particularizing its future knowledge base will enjoy many benefits: it has few other competitors for resources (the two or three other regions which selected the same specialization areas); critical mass is therefore easier to reach and the agglomeration economies less difficult to create; and the produced knowledge resources (for instance human capital) are co-specialised assets with the risk of them moving away limited.

It is important to highlight here that the search for smart specialization does not involve a bureaucratic process or an exercise of foresight, ordered from a consulting firm. It concerns an essentially entrepreneurial process, involving the discovery by local entrepreneurs, regional universities and so forth of the research and innovation domains in which a region can hope to excel (European Commission 2008, 14).

THE ROLE OF REGIONAL POLICYMAKING

When an entrepreneur in a small firm or a team of researchers in a laboratory of a multinational company or a group of people across different universities and firms in a global innovation network toy with a new idea, they do not (and cannot) know whether their baby is ever going to fly. They operate under

conditions of incomplete and imperfect information with respect to the development of their idea inside the lab and its acceptance by the market once it is ready for commercialization. Indeed, the idea may turn out a flop and get canned before commercialization. Such an uncertain environment is not conducive to innovation in that the risks of getting it wrong may conceivably be higher than the potential rewards of pursuing the new idea. If uncertainty completely hinders innovative activity, we have an instance of a total market failure. Failures can also result from incomplete appropriability, a low level of firm capabilities, or the absence of interactions between different actors in the system.

Governments can address such failures. Of course, they do not have superior knowledge about future technological trajectories compared to the private sector; in fact often

to the activities it promotes so that failures are recognized and success is rewarded. Sunset clauses should ensure that beneficiaries do not count on public support forever since that would contradict the viability of their activities. Ideally, supported activities would have demonstration effects so that learning takes place outside the narrow confines of direct support. Since it is inevitable that government will occasionally get things wrong, it is important that this process be transparent so as to be able to intervene before losses become too high. Finally, since the dynamics of industries evolve, so must policies geared to supporting them - all policies have a limited shelf life (Rodrik 2004). In other words, what is appropriate for an economy at an early stage of catch-up, where firms mainly imitate simple technologies, will not be sufficient for an economy whose firms target more complex technologies in advanced activities.

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Support for catch-up is demanding for policy because it is a cumulative process; what matters is the co-evolution of successively better physical assets,

the opposite is the case. But they can facilitate the coordination through which relevant actors receive incentives to compensate for uncertainty and high risk through sharing insights, pooling resources, collaborating on specific actions and so forth. The exact policy mix as well as the timing and sequencing of interventions will depend very much on how specific markets work (or not), whether they advance developmental objectives (or not), and on how governments can enhance markets so that their dynamics conform with desirable social objectives such as higher growth, more equitable job creation, and poverty reduction, all of which are likely to require supporting institutions that do not emerge by themselves but need to be created (Cimoli, Dosi, Nelson, and Stiglitz 2007).

human capital, and financial systems (i.e. the framework conditions), firm capabilities, and a knowledge infrastructure that supports the supply of knowledge within a system that encourages interaction between the various actors (UNCTAD 2007). Improving only a subset of these variables is unlikely to do the trick. On the other hand, no authority can decide to "plan" catch-up comprehensively from scratch.

What governments can do is to decide on a gradual set of interventions, while carefully monitoring the effects of their policies. So there is a feedback loop from policy implementation to policy formulation - in that action and its consequences inform further thinking - and this is where learning takes place. The higher the informational requirements of policy, the more it is advisable to stick to simple interventions. Ceteris paribus this means that for governments with little experience in this regard, horizontal (i.e. economy-wide) policies will be more beneficial than vertical (sector-specific) policies (Lall and Teubal 1998).

The key requirement is for government to work with industry. This is no guarantee for not getting things wrong but it can considerably reduce the margin of error in guessing future technological trajectories. In this perspective, the principal role of government is as a facilitator of learning. It must attach unambiguous criteria of success

From page 10

Since the knowledge intensity of economic activity has risen, policies to promote such activity must also become more knowledge intensive. This underlines the importance of research to support policy formulation (Bartzokas and Teubal 2002). A policymaker that is adaptive - as opposed to optimizing - relies on research input to (re-)establish congruence between strategy and ever changing real-life circumstances (Metcalf 1994.). She also relies on feedback from the private sector and other institutions, especially if one believes that innovation policies are inherently context-specific and not merely the reproduction of so-called best practice.

In sum, a policy framework conducive to innovation policy would need to comprise the following components:

- (some) vision of where the economy is and should be going and how the business sector must be transformed to contribute to this goal;
- a set of STI priorities following from this vision;
- a taxonomy of policies that distinguishes between what they are supposed to achieve, how, and through what measures;
- how the above can be accommodated (or is in conflict with) the national policy system;
- knowledge about internal dynamics and external trends that affect the economy in question;
- the interaction between policy and policy induced processes of change (ibid, 491-2).

In essence, innovation policy tries to facilitate the self-organisation of an innovation system. This is a process that takes time and therefore needs organizational and institutional patience.

THE EMERGING REGIONAL INNOVATION SYSTEMS STRATEGY

Much of the thinking referred to above has informed DST's Framework for Engagement in Regional Innovation Systems Development. The document criticizes the absence of attention to innovation in provincial and local government strategies. It effectively demands that incentives for innovation be mainstreamed into intervention in support of (economic) development, lest the knowledge economy remain the domain of the tuned-in and turned-on. It also acknowledges the totally deficient data situation at local and provincial level to facilitate a deep understanding of innovation dynamics, let alone evidence-based policymaking. It also cautions against unreflected policy borrowing from so-called best practice and emphasizes that developing an effective RIS will take a long time.

It can perhaps be criticised for its determination to set up an array of new institutions. We know from both history and theory that there are no institutional quick fixes, and therefore new councils and forums by themselves won't kickstart innovation activities where so far they have not been happening. What really matters for that is to get a discussion between all relevant actors

in the regional economy going, and this must prominently include those we think least of when talking about innovation, namely entrepreneurs in the informal sector and communities in rural areas. This in itself is an important reason why DST's public engagement around the draft strategy is worth attending.

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