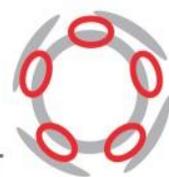


LMIP Colloquium

29 and 30 September 2016

Report on the presentations, discussions and conclusions
of the colloquium



LABOUR MARKET
INTELLIGENCE PARTNERSHIP

TABLE OF CONTENTS

| | |
|---|-----------|
| LIST OF ACRONYMS | 5 |
| FOCUS AND PURPOSE OF THE COLLOQUIUM..... | 7 |
| COLLOQUIUM OBJECTIVES..... | 8 |
| OVERVIEW OF THE COLLOQUIUM OUTCOMES | 9 |
| THE COLLOQUIUM PROGRAMME..... | 11 |
| SITUATING SKILLS PLANNING: THE NATIONAL DEVELOPMENT CONTEXT | 11 |
| SKILLS PLANNING: A LABOUR MARKET PERSPECTIVE | 13 |
| SKILLS PLANNING: AN ALTERNATIVE PERSPECTIVE | 18 |
| SKILLS PLANNING: EVIDENCE FROM FORECASTING MODELS..... | 21 |
| SKILLS PLANNING: EVIDENCE FROM THE CHANGING NATURE OF ARTISANAL WORK AND OCCUPATIONS..... | 23 |
| SKILLS PLANNING: EVIDENCE FROM THE LEARNING PATHWAYS OF YOUNG PEOPLE | 26 |
| CURRENT CAPABILITIES: POST SCHOOL EDUCATION AND TRAINING INSTITUTIONS | 28 |
| PANEL DISCUSSION: CURRENT INITIATIVES: GOVERNMENT..... | 33 |
| CONCLUDING SESSION: CRITICAL OBSERVATIONS | 42 |
| CLOSURE AND WAY FORWARD | 43 |

LIST OF ACRONYMS

| | |
|---------|---|
| ADRS | Applied Development Research Solutions |
| ASGISA | Accelerated and Shared Growth Initiative for South Africa |
| ATR | Annual Training Report |
| CIPSET | Centre for Integrated Post School Education and Training |
| CPUT | Cape Peninsula University of Technology |
| DBE | Department of Basic Education |
| DHA | Department of Home Affairs |
| DHET | Department of Higher Education and Training |
| DG | Director General |
| DPME | Department of Performance Monitoring and Evaluation |
| DST | Department of Science and Technology |
| DTI | Department of Trade and Industry |
| DUT | Durban University of Technology |
| EPC | Education Policy Consortium |
| EPWP | Expanded Public Works Programme |
| GDP | Gross Domestic Product |
| HEMIS | Higher Education Management Information System |
| HR | Human Resources |
| HRD | Human Resource Development |
| HRDC | Human Resource Development Council |
| HSRC | Human Sciences Research Council |
| ICT | Information Communication Technology |
| IEB | Independent Examination Board |
| ILO | International Labour Organisation |
| JIPSA | Joint Initiative for Priority Skills Acquisition |
| LMIP | Labour Market Intelligence Partnership |
| MEC | Member of the Executive Committee |
| MerSETA | Manufacturing, Engineering and Related Services Sector Education and Training Authority |
| MOU | Memorandum of Understanding |
| NATED | Report 911 programmes offered in TVET colleges |
| NCV | National Certificate Vocational |
| NDP | National Development Plan |
| NMMU | Nelson Mandela Metropolitan University |
| NQF | National Qualifications Framework |
| NSA | National Skills Authority |
| NSF | National Skills Fund |
| NSFAS | National Student Financial Aid Scheme |
| NSC | National Senior Certificate |
| NSDS | National Skills Development Strategy |
| OECD | Organisation for Economic Cooperation and Development |
| OFO | Organising Framework for Occupations |

| | |
|------|---|
| PSET | Post School Education and Training |
| RPL | Recognition of Prior Learning |
| SADC | Southern African Development Community |
| SAQA | South African Qualifications Authority |
| SET | Science, Engineering and Technology |
| SETA | Sector Education and Training Authority |
| SIPS | Strategic Infrastructure Projects |
| SKA | Square Kilometre Array |
| SSP | Sector Skills Plan |
| TVET | Technical and Vocational Education and Training |
| UDF | United Democratic Front |
| WIL | Work Integrated Learning |
| WSP | Workplace Skills Plan |

FOCUS AND PURPOSE OF THE COLLOQUIUM

In late September 2016, the Department of Higher Education and Training (DHET) and the Human Sciences Research Council (HSRC) convened a research colloquium. The intention was to create a space for researchers, policy makers, planners, educators and trainers to engage, by sharing frameworks, approaches and practices of skills planning.

In a global and local economy, it is important to understand what types of key occupations, and accompanying qualifications and skills, are required to support inclusive social development, economic growth, and trade and investment. It is equally significant to understand what qualifications and skills training are required to ensure that the complex and changing needs of society and the economy are met. DHET and the HSRC thus partnered in a process to develop and establish a credible institutional mechanism for skills planning.

Since 1994 there have been efforts to plan for skills development in South Africa, but the skills planning mechanism has failed to operate as effectively as anticipated. This can be partly attributed to over-ambitious objectives, to borrowing limited models from elsewhere, and to a lack of co-ordination among key players. The DHET's commitment to lead a process to '*establish a credible institutional mechanism for skills planning*' represents a first coherent attempt to develop a centralised approach to skills planning that links decision making to the outputs from an embryonic Labour Market Intelligence System.

The Labour Market Intelligence Partnership (LMIP) has produced significant research over the past four years, to strengthen the evidence base over the medium to long term. Here, researchers have proposed an architecture and framework for decision making, skills planning indicators and methodologies, and skills forecasting, having piloted new labour market information datasets and systems that need to be further developed. They have also contributed critical labour market intelligence on the changing nature of work and occupations, on attitudes to employment, on institutional responsiveness and interactive capabilities, and on transitions to the labour market.

The complexity of the task, starting on a weak and fragmented base, is well recognised, and it is also recognised that it will take time to establish and strengthen the necessary institutional conditions and capabilities for skills planning. The DHET and its entities are faced with immediate questions to determine where there are skills mismatches, shortages, and gaps; and where their researchers and planners have developed ways to inform planning and funding decisions across the post-school education and training (PSET) system.

The colloquium thus provided an opportunity to share the emerging evidence, and engage with what is possible and desirable. The main purpose was to inform and support the skills planning policy and practice

of DHET and its entities, at varying levels and in varying spaces. It was hoped that the conclusions reached at the colloquium would help inform decision-making on the plans, planning processes, and future research for skills planning, going forward.

In order to make funding decisions, the DHET has to determine what information is needed, and at what levels.

It should be noted that there are many different views on how skills planning should be approached with no appropriate model globally that can be replicated. When the research was presented and discussed at the colloquium, there were many areas of agreement on the way forward, but in some important areas there remained differences. These are documented in the report.

The strong recommendation is that the stakeholders should continue to engage and to find resolutions, or at least accommodations, that can enable work to continue whilst allowing further engagement.

COLLOQUIUM OBJECTIVES

The objectives of the colloquium were as follows:

1. To understand the relationship between education, skills and inclusive economic development.
2. To gain insights and learn from comparative international practice.
3. To debate appropriate models for matching skills supply and demand that can address South Africa's development challenges.
4. To understand the changing nature of work and occupations, and the implications for skills planning.
5. To promote good practice partnerships and mechanisms to enhance institutional responsiveness.
6. To consider how to track transitions from education and training to the labour market more effectively.
7. To identify the best available datasets and frameworks for understanding current and future skills demand, at macro, meso and micro levels - the institutional, local, provincial, national, international, sectoral and occupational.

To view the conference programme please click on the following link [Colloquium Programme_Final.pdf](#).

OVERVIEW OF THE COLLOQUIUM OUTCOMES

Skills development is part of a wider set of National Development Plan (NDP) objectives involving the economy, industry strategy and raising education standards. The need for centralised skills planning mechanism and process is widely understood and agreed upon. However, determining the nature of such a mechanism is not a simple matter. It is multi-faceted and requires agreement to put in place a range of policy interventions and levers, and to coordinate these across government and between stakeholders.

A particular challenge is locating skills planning as part of a wider industrial strategy. A comprehensive industrial strategy would enable skills development to be aligned more closely with future job openings. Skills development cannot just respond to demand in the economy but must play an active role in government efforts to expand the economy, develop industry and society and, in particular, create jobs and promote small businesses. This means understanding the economy and partnering economic role players effectively.

There is a need to address the overwhelming public perception that there is currently a serious mismatch between the needs of the economy and industry, and the outputs of the education and training system. This is an issue for skills planning, but it is a wider challenge that requires education and training, as well as economy stakeholders to clarify the challenge and address it. Effective skills' planning is *part* of the solution, but the full answer requires much wider discussion.

Evidence based planning is important to government. There are many demands for resource allocation; therefore the allocation of scarce resources for education and training needs to be considered carefully and decisions must be based on sound research and forecasting.

This country is facing an immediate challenge of the economy being caught in a low growth trap. Radical interventions are needed to break free and get the economy moving in an inclusive manner. Skills can play *one* important role, but a key and urgent challenge is to increase growth levels.

The basic education system needs to be improved so that it can produce well educated people for vocational and occupational programmes. It is not realistic for skills development programmes or universities to make up for deficits in learning from the schooling system.

There are different views as to the nature and scope of vocational and occupational education and training. There is a need to train people for the occupations that are identified as in demand, but in doing so, there is a danger that one could be training for a job that may change or disappear. The challenge is to develop peoples' skills to be adaptive to change which implies a broader technical and vocational base. These are

important discussions that need some practical resolutions, in order to develop a framework that all role players can work within at general, further and higher education level.

Modelling, scenario planning and forecasting are an important part of skills planning and some of the findings from models both confirm and deepen evidence that the labour market is changing. There will be more demand for higher end skills, and less for lower end. Some sectors have the potential for expansion of jobs, but the chance of employment will be very much affected by education and skills levels.

There is a clear need to develop middle level skills, particularly artisan trades where basic skills requirements remain quite constant and are expected to remain needed. However, there are many changes, mainly brought about by technology, and many soft skills needs are emerging. This implies the need to examine the best way of addressing changing demand, possibly through ongoing professional development.

Race and class remain an important determinant of skills levels. Many black people and people from poor households receive a poor basic education. As a result, they become disadvantaged in getting jobs and obtaining further skills. This points to the need for a range of interventions to support learners and to remove blockages caused by poverty and weak social networks. Those who succeed at school and are accepted into Bachelors' programmes at university, tend to perform much better than commonly understood. However, they often lack career guidance to help them select qualifications that will train them towards occupations in demand.

Besides the above, there are other critical challenges in the transition from education and training to work. There is a need to clarify what skills need to be included in the formal learning environment and those that need to be addressed in a work context. More structure is needed for internships and induction, to address industry and occupation specific competencies. The role of intermediaries such as industry bodies and Sector Education and Training Authorities (SETAs) is critical. Skills are needed in these institutions to enable partnerships and develop productive relationships. A great deal of work has been done across government to address skills and related policy challenges such as youth unemployment, small business development, the informal sector and the economy. Coordination is improving and this needs to be taken forward and deepened.

The process started by the LMIP will now be taken forward by DHET, with the establishment of a skills planning unit in the Department. If there is general agreement on most of the conclusions reached in the four years of research and stakeholder engagement, consideration should be given to an intensive planning process (possibly drawing on the model of Operation Phakisa) to ensure that the various aspects of skills planning are consolidated and taken forward.

THE COLLOQUIUM PROGRAMME

SITUATING SKILLS PLANNING: THE NATIONAL DEVELOPMENT CONTEXT

Prof. Crain Soudien: Building a credible institutional mechanism for skills planning: The contribution of LMIP

Crain Soudien provided the background to the LMIP project. The HSRC received a request from the Minister of Higher Education and Training to develop an *institutional mechanism for skills planning*. This resulted in four years of work under the LMIP. LMIP provided an opportunity for a partnership between the research community and government to explore the challenge of identifying skills demand.

The NDP provides a long term perspective to address poverty, inequality and unemployment. Within that context, the NDP identifies skills as a key priority. A credible skills planning mechanism is therefore a critical step in achieving the goals of the NDP.

The approach adopted was not to start from a blank sheet but to build on what exists. The project also drew on international experience to inform its work. A programme of research was put in place, with a series of engagements and round tables, prompting continuous stakeholder engagement and feedback. Some key learnings emerging from the process are highlighted below:

- There is a need for an inclusive skills planning approach: the starting point must be to examine and understand the economy, the growth trajectory and overarching government economic and industrial strategy. There must be a deliberate intention to create jobs at different levels. One of the challenges is that of striking a balance between jobs and technology – labour intensive production methods create jobs, but capital intensive production utilising available and new technology is needed to be globally competitive
- South Africa has a unique legacy, characterised by contradictions. Education and training is playing a role in leading us through these contradictions and the ways they are playing out in the labour market.
- An important development has been the decision taken by the DHET to establish a Skills Planning Unit. The LMIP research gives an idea of what this unit could be doing.
- One complexity is the dynamics in the labour market and understanding why people take their careers in a particular direction. Government may plan for a particular set of skills and needs in the economy, but individuals take those skills in a variety of directions. Therefore, it is not a straightforward matter of determining skills needs and planning for them. Responsiveness is needed in those institutions established to address supply and demand.
- Education and training cannot only be about what the economy needs, as important as that is. It has to respond to needs in industry. Therefore, there is a need to understand the labour market and what is

happening in that market and respond appropriately. In that context, the education and training system must engage with the critique of employers about the lack of readiness of young people for work. Even when young people have received training appropriate to the occupations that are in demand they often are unable, or not yet ready, to take their place in the workplace.

The research undertaken over the last four years has been documented and the individual reports can be accessed via the HSRC website. A sample of some of the most important findings was presented at the Colloquium to stimulate engagement.

A common theme was the importance of relationships where it was emphasised that conversations are needed between the research community, industry, and government, with the intention of learning from each other. There is great value to be had in bringing activists, academics and experts together to understand each other's strengths and blind spots. The LMIP has tried to facilitate a process whereby the challenges can be explained, put on the table and understood. Planning to meet labour market demand cannot only depend on experts from the field of education and training nor indeed solely the doers - the employers and other labour market role players. There must be a relationship between them. The Colloquium was an attempt to showcase the interactions needed to produce a viable skills planning mechanism that is effective and responsive.

Gwebinkundla Qonde, DHET Director General: Welcome opening:
Gwebinkundla Qonde set the context for the skills discussion. He explained that one of government's priority outcomes is a *skilled and capable workforce* (Outcome 5). This needs to be set against a background of unemployment and a lack of skills both within the workforce and in particular amongst the unemployed. There is a mismatch between what is needed in the economy and the outcomes of our education and training system. This constrains growth and hampers efforts to address exclusion. The South African workforce is one where there are generally low levels of tertiary qualifications. The number of graduates with a PhD is low as well, at 3 per 100 000 of the population. The DG commented that efforts are being made to accelerate the production of PhDs.

Innovation and productivity are key to the country's future. Free higher education is on the agenda, being deliberated by a President's Commission which will report in May 2017. The solution to the university sector's troubles is not easy, nor is it one for government alone. He noted that there is a need for employers to expand bursary programmes.

In the context of the South African labour market, the demand for artisan and technical jobs is greater than for professionals. There are gaps that need to be filled. For example, there is limited training for drivers, and yet drivers are needed in a variety of industries with specialist skills required for the specific industry one is working in. There are many such examples. There is clear demand for certain trades – building, electrical,

metal – and so it is important that the focus not only be on higher education. Resources have to be found to address education and training at all levels in line with the needs of the labour market.

If the country is to target resources appropriately, improved labour market intelligence is critical. There is a commitment within government to evidence-based planning. This implies the need to understand what education and training is required as a priority. Inclusive growth means not focusing on a small number of people in higher education. There must be training for the unemployed, young people leaving formal schooling, as well as others. The DG commented that it is important to be able to target resources sensibly.

The country's National Qualifications Framework (NQF) is acclaimed as one of the best in the world. The Department of Higher Education and Training has, within the framework of the NQF, developed policies on articulation and the Recognition of Prior Learning (RPL). Existing workers need training as well, to enable them to gain needed qualifications and to support them in their careers. Productivity can be improved by retraining employed people. This applies to both the public and private sector, but perhaps especially in the public sector.

Education and training must be provided in a manner that enables more people to be absorbed into work. Labour intensive methods are important and they must be supported with skills development. It is recognised that current economic growth is not adequate to enable employment to be expanded substantially in the near future. Unemployment is in fact escalating. To alleviate this, imaginative solutions must be explored and appropriate training provided, to assist unemployed people to find work or income generating opportunities.

This opening session established the context and focus of the colloquium. To summarise, there is some urgency in addressing skills needs in the economy and society; in order to do so, skills planning is a critical requirement. It is not a simple matter as there are many factors that impact on supply and demand in the labour market. All of these need to be unpacked and a way forward found. The importance of process – not seeking simple solutions, but engaging education and training as well as economy and industry stakeholders in brokering agreements – is key. Skills' planning has to be part of a wider set of processes that address industrial planning and government-wide efforts to create jobs within a difficult and changing set of economic circumstances.

SKILLS PLANNING: A LABOUR MARKET PERSPECTIVE

Vijay Reddy introduced this joint session with **Haroon Bhorat** by launching the *State of Skills* report prepared for this colloquium **Vijay Reddy** acknowledged important role-players in the LMIP programme from DHET and research organisations. She commented that the report adds significantly to the understanding that exists on the challenges within the South African labour market, and she also drew

attention to the extensive documentation, only a fraction of which would be presented and discussed in the colloquium.

Haroon Borat: What are the main features of economic growth and labour market demand?

Haroon Borat explained that the country is facing serious economic growth challenges. South Africa is in what can be described as in a *low growth trap*. Other countries are doing better. For example, there are countries such as China which is going from being low income a decade ago, to being middle income today, and expects to achieve high income status by 2030. China has been averaging 9% growth for decades. India's average annual growth is 5%, Brazil is now at 2%, while South Africa is averaging 1% per annum.

A key economic indicator to watch is investment for growth. As a minimum, there is a need for investment to be around 30%. In China, such investment is 30% to 50% of GDP, while in South Africa, this has been running at between 12% and 20%. There is clearly not enough investment taking place, and the reasons need to be understood. Rate of return on investment is not much different in South Africa than in China, so low profits are not the reason. Rather, there must be other factors such as market saturation, which implies the need to develop products and services for export. Alternatively, it could be lack of skills and other related factors.

Exports need to be increased as a percentage of Gross Domestic Product (GDP). Whilst in South Africa exports are around 10% of GDP, in many countries this is between 20% and 30%. Taiwan has gone from being a low income/low tech country to being a high tech economy. China is now getting into high tech exports. High tech can be services, not just manufacturing. South Africa needs to move in that direction. South Africa still remains a high producer of iron ore and metals, instead of focusing more on manufacturing.

The country faces a number of policy challenges: the collective bargaining and labour relations framework that is in place results in higher wages for small groups of workers. An unintended consequence of the market domination of large companies bargaining with trade unions is the exclusion of small businesses. Opportunities for expansion are restricted to large companies.

Basic education in South Africa remains a challenge, and learners continue to leave school with poor levels of maths and literacy. By comparison, Vietnam as a developing country is achieving better school test results than France. If South Africa wants to develop the skills of its workforce and grow the economy, it is imperative that school results improve.

Vijay Reddy: What is the education supply and is it appropriate?

Vijay Reddy explained that skills supply and demand in South Africa has to focus on societal development and supporting what is called an inclusive growth path. It is important to state that skills planning is not the same as what used to be called “manpower planning”. The process needs to go beyond that, and work with complexities and contradictions in the labour market.

Vijay Reddy highlighted key findings of the LMIP research into the current supply and demand for skills:

- **The economy is experiencing poor growth and so the demand for skills is also low.** Growth levels are insufficient to enable the economy to absorb new entrants to the labour market. Work is changing and as it does, there is limited demand for low skill jobs. There is a shift from traditional primary production and manufacturing to services, and there is a structural mismatch between demand and supply. There is a need to address both the high and low skills challenges.
- **Education and skills supply is affected by the low quality of basic education.** Most programmes linked to occupations in demand in the economy require people who have been successful in languages, maths and science. Of the approximately 1.1 million learners entering the schooling system each year, only around 140 000 leave with National Senior Certificate (NSC) grades that enable entry to higher education. However, of these, only 50 000 are able to get into maths-based degrees. This figure is far too low. The university sector is producing around 185 000 graduates a year. In the public Technical and Vocational Education and Training (TVET) colleges there are 800 000 students. Only 21 000 obtain the National Certificate Vocational (NCV) at level 4 (equivalent of NSC/Matric) and only 57 000 obtain the highest level of NATED qualification (level 6), which is an indicator of readiness to move to higher education via TVET colleges. Again, these are very low levels of achievement in the public education system.
- **Labour market is changing.** When examining the relationship between tertiary education and the labour market, 50% of university degreed people go into social services or public sector jobs. Graduates in Science, Engineering and Technology (SET) tend to gravitate to the financial services sector. Conditions of service impact on these choices. There is a need to produce more SET graduates but also to look at the reasons many graduates do not go into the industries their qualifications are intended to equip them for. Three million of the country’s workforce have a degree, but 75% of these are in the public sector and financial sector.

LMIP research suggests that: skills policy must look at both ends (high and low) in the labour market; there is a need to compete in the global market for high skills but at the same time address the needs of low skilled employment at home; it is essential to improve skills at all levels from schooling to SET in universities. In short, there must be an improvement in the match between supply and demand.

Discussion

John Buchanan of Sydney University responded to the presentations by pointing out some of the global complexities. It is true that skills are needed in the economy but the relationship between skills and the economy is not a simple one. The Cuban and Scottish economies have high education levels but are experiencing poor growth. So there is no automatic link between skills and economic growth. Some countries do well and end up exporting skills to other countries.

He suggested that South Africa has the possibility of getting agreement on industrial strategy. This is not easy as there are so many factors that impact on investment and the nature of investments being made, but it is the key to aligning skills to growth.

In the ensuing plenary discussion, the following key points were made by participants:

- It seems to be an anomaly in South Africa that many people go to work in sectors for which they have not received trained. This might be because there are jobs in certain sectors which are not as readily available in the sectors they trained for. Research points to conditions of employment being important. Salaries, but also other conditions of work, impact on decisions taken by skilled people when applying for jobs.
- Another interesting research finding is that some universities prepare graduates more strongly for certain sectors. For example, in the Eastern Cape many Rhodes graduates go to the private sector, whereas Fort Hare graduates tend to find jobs in the public services.
- The reasons for mismatch of supply and demand are numerous. Those being trained in technical and vocational programmes at TVET and higher education level may be learning in the wrong subjects, and there may be curriculum challenges. However, it could be that the functioning of the education and training systems need attention. The allocation of funds, infrastructure, and training of lecturers are all factors.
- **Haroon Borat** suggested that *disruptive innovation* is needed. Some disruption of the system is needed to break out of a cycle of low achievement. It is really important to create opportunities for small businesses as this is where jobs will be created, not so much in traditional industries or in large firms where capital intensive methods can be used. Driving industrial strategy means taking on obstacles to growth even if they are difficult. Organised labour's role needs to be challenged, and there is a need to take on vested interests. Some large companies are actively discouraging small businesses getting into the market, and they must be challenged.
- According to **Haroon Borat**, if the Department of Basic Education (DBE) could pay a premium to maths teachers we could address that weakness in the education system that the research shows to be so significant. Again, this means challenging the direction that collective bargaining is taking in relation to

teaching.

- One of the challenges is to understand small business. Many survivalist entities are encouraged, but most do not develop into viable businesses that employ people. The focus needs to be on creating more small businesses that are able to expand and absorb additional workers.
- There is a problem of unintended consequences in industrial policy. For instance, charges for transport to ports make it cheaper to export coal than clothing. It is unintended but the advantages of remaining in primary production outweigh those of adding value through manufacturing. So some of the required solutions are around skills, but the skills agenda has to be part of a wider set of interventions that address underlying problems.

MESSAGE FOR SKILLS PLANNING POLICY

This session rooted the symposium discussion within the context of the South African reality of a sluggish economy and poor levels of job creating industrial expansion. There is a need for serious interventions in a number of areas – some related to skills but also many that are not under the control of skills development stakeholders. The discussion also highlighted the importance of basic education, and achieving greater levels of academic success at all levels in the education system, in addressing the skills challenge. Just as skills planning is not a simple matter, neither is the task of agreeing and implementing industrial strategy and improving quality and outputs in schools. However, all of these have to be addressed if there is to be progress in raising the skills profile of the South African workforce and improving absorption levels.

SKILLS PLANNING: AN ALTERNATIVE PERSPECTIVE

John Buchanan: Professor in Business Analytics at the University of Sydney: Workforce planning versus planning for workforce development: getting the questions right.

John Buchanan began the session, stating that it is important to consider the global context. The world economy has not recovered from the 2007/2008 financial crisis. South Africa is affected and also has its own challenges. The StatsSA Labour Force survey data is of a high quality. More use should be made of the statistics that are available. The statistics show that there is structural unemployment with reducing jobs in manufacturing and primary production and a huge level of casual, informal sector economic activity. The formal labour market is contracting.

Internationally, neoliberalism is not doing well, and there is growing evidence of a popular revolt against governing elites. There is growing concern about inequality. As in other countries, being expressed in different ways, South Africa is home to a lot of frustrated expectations. There are strengths such as good quality statistics and stakeholder structures and processes of which the LMIP is an example. These are positives and can be built on to find solutions.

John Buchanan illuminated the challenge of skills planning in this global context by suggesting the need to distinguish and manage the tension between two broad approaches: *workforce planning*, and *planning for human capability development*.

A critical observation (from the distance of Australia but in the context of a global overview) is that there is a prevailing “tacit narrative” of *workforce planning* in South Africa (as in many other countries). This approach is generally based on the understanding that the future is certain and can be taken for granted, and all government needs to do is fill gaps. There is an alternative narrative - *planning for workforce development* – which entails working with complexities and contradictions. These are not mutually exclusive narratives, but skills planners have to be conscious of each and work with them. He suggested that the most appropriate future approach to planning for the provisioning of skills in South Africa can be assisted by asking specific questions:

Planning for what? Are we planning to fill a skills gap or are we planning for a broad set of skills that will be needed? In the area of technical and vocational training, child care is a useful example to look at. One can be trained in a specific task of keeping a child healthy or safe (narrowly focused training) or developed as someone who can assess a child’s needs and plan for them (broader approach). There are many examples of how training can be very narrow and for a specific set of tasks, or it can be broader and enable a person to perform a variety of roles and respond to changing needs in a work situation. The approach should be to *deepen adaptive capacity* in support of social and economic renewal.

Planning about what? The concept of occupations has its challenges. There are four global sets of classifications: the OFO (organising framework for occupations - adopted in South Africa); sector industrial classifications; classifications used in bargaining councils for the setting of wage levels; and increasingly those used by qualification authorities. This is not leading to a stable set of arrangements or a common understanding around occupational categories.

There are attempts within the education and training system to develop vocational streams. In vocational programmes there may be a number of possible career moves once qualified. But what do people actually do? Tracer studies conducted have shown that farm workers who are being trained to take on higher level jobs within agriculture are in fact moving horizontally not vertically. This is partly a result of occupational segmentation. Training people to take a particular career path can in practice be part of limiting a person's ability to progress.

There are different types of vocational streams. For example, there can be a *set of occupations linked by common knowledge, skills and capabilities with a broader field of practice*. These could be such fields as care work; financial advice; or engineering. The point is that these are slightly wider than a specific occupation but are targeted at a broad set of occupations.

There are a number of practices that could be built into the education and training planning process. One would be the search for a *common set of capabilities* required within occupational categories. Another would be working on *social partner readiness* - the readiness of role players such as employers and workplaces to support training at this broader level (rather than specific "on the job" training for a specific job need). Finally, there is a need for the development of *communities of trust*. Employers need to have a level of trust in those training and trade unions need to believe that employers are training in the interests of workers, and so on.

It is suggested that a number of methodologies can be applied to understand each of these. For example, bringing together statistical and quantitative analysis with qualitative research is important. Scenario thinking and planning approaches can also assist. If three or four potential scenarios are developed, stakeholders can then consider what is needed to achieve a preferred outcome. In South Africa, there are historical stakeholder processes such as those of the United Democratic Front (UDF) that can be drawn on, as well as current stakeholder processes, such as Operation Phakisa.

Discussion

Main points emanating from participants highlighted that it is important not to see the two approaches (narrow occupation versus adaptive capacity) as mutually exclusive opposites. The *Human Capital* versus *Human Capability* dichotomisation can be quite problematic. For example, a firm may need a welder and train people for the occupation of welder, but in delivering that qualification, can build in versatility and the ability to solve problems. Also, workforce planning is possible in some sectors, occupations and projects, and in short timeframes. On the other hand, if a ten year scenario is being used, then a broader vocational approach is needed. Perhaps the approach should be to start with a vocational stream, then narrow to occupations, and then allow for specific job (maybe on the job) training.

There is also the tension between trying to plan nationally, and the complexity of society and the inability to anticipate unintended consequences. Scenario thinking is helpful, but may not anticipate all developments. In the context of South Africa, there are also significant differences on a provincial and even regional basis, where different planning approaches are needed. National planning can fail to address such needs. Perhaps it might be better not to try to plan centrally, but to adopt a more organic approach. Maybe the answer is to develop a loosely defined common framing, so that people are not victims of a single employer, they must not be there for life. A good example is watchmakers in Germany who, although trained in quite a narrow and focused occupation, have acquired through this training skills they can take into other domains.

The debate around basic or foundational versus vocational education needs to be a dynamic one. Some employers are saying they want people with a good NSC/Matric and the ability to think logically. They will then train that person in the job they want the person to do. Some others say they want people with vocational skills but need them to be able to think for themselves, thus assuming a decent basic education. The general agreement is that basic education needs to be better and that focusing exclusively on vocational streaming will not resolve that problem.

There is also a need to work on the issue of work experience and on the job training. Perhaps there is a need to make the assumption that actual job related training will take place once a person is employed in the workplace, rather than expecting such training be provided as part of the vocational or occupational training. The challenge then becomes to deliver effective "broad" skills training and to work with employers to put in place quality on the job training. There is a need to recognise that not all workplaces are effective training sites, and willing employers need to be found to work on providing quality workplace experiences for learners emerging from vocational and occupational programme.

MESSAGE FOR SKILLS PLANNING POLICY

This session surfaced a very important area of disagreement amongst education and training, as well as wider economy and industry stakeholders. How much should the focus be on broad foundational education? How much should the focus be on developing a strong vocational pathway? To what extent is it appropriate to focus skills development on occupational qualifications? There is consensus that getting basic education right is important. That is not disputed. There is a degree of consensus that broadly focused vocational education and training is needed - at general, further and higher education level. However, there is less agreement on the content of vocational education and training, particularly on whether vocational education and training should prepare learners for particular occupations. In relation to occupational qualifications, there is agreement on a number of traditional artisan trades requiring occupational qualifications, but less agreement on the extent to which the occupational focus should be expanded, and in particular, whether such training should be prioritised over broader vocational training. The discussion at the colloquium indicates a need for this important debate to be taken forward, so that there can be a common framework agreed that enables implementation to be approached in a similar but flexible manner in the different industry contexts, and at the different levels of general, further and higher education.

SKILLS PLANNING: EVIDENCE FROM FORECASTING MODELS

Asghar Adelzadeh: How do we forecast future skills needs?

Asghar Adelzadeh presented a linked macro-economic skills forecasting model for South Africa developed by Applied Development Research Solutions (ADRS). The model is constructed on the basis of interactions, behaviours and links. Forty-five sectors are identified. Job openings and vacancies are monitored and factored into the model. The September edition of *The Bridge* magazine produced by ADRS sets out a flow chart for the model and explains the different modules. The model forecasts that as the workforce grows over the next ten years, there will be an expansion of the proportion of management and professional jobs compared to unskilled and semi-skilled, and there will be a reduction of jobs in the primary sector as a proportion of total employment with manufacturing and services adjusting upwards as a result. There is the greatest potential for employment growth in construction, health services, manufacturing, wholesale and retail, and hospitality and tourism. Given the expanding number of low or semi-skilled people entering the

labour market and the expected expansion in higher level jobs, the current situation of expanding unemployment amongst low skilled people will continue. The higher a person's education level, the less likely that person is to be unemployed.

Adrienne Bird: How do we forecast skills needs in response to government interventions and strategies?

Adrienne Bird outlined the approach developed by DHET to plan for skills to support the implementation of strategic infrastructure projects (SIPS). The commitment to a developmental state means that planning must be such as to take the country and the economy on a new trajectory. The NDP Identified 18 major SIPS, with over 2 000 individual projects linked to these. Using 21 Steps, the approach seeks to crowd in investment. Occupations were identified across the SIPS as well as across other important government programmes (such as the War on Leaks). For each project, analysis identifies the specific skills needed; these have been collated across all the projects. The level of demand and projections has been quantified and used to inform targets.

There is then a process of preparing for delivery. Providers will be identified and developed as centres of specialisation. Each centre will focus on a particular occupation or set of occupations and will serve many sectors. SETAs in particular are building the SIPS requirements into their plans and work is being done with TVET colleges and universities to address the targets.

The aim is to increase the skills pool of people required for multiple projects. A start has been made where demand is greatest. Where possible, individuals with some but not all skills will be identified and provided with top up training.

Discussion

Comments emanating from participants during the discussion were varied. There is a challenge to identifying what the main skills needs are and how these link to social transformation. Society should not be fitted to the National Qualifications Framework (NQF). In addition, an overarching challenge is to improve articulation and expand the use of RPL. A question may also be how what is being done in South Africa, articulates to qualifications frameworks in other countries.

Another comment was that it is possible to use the projections from models to inform skills training. One approach is to work within value chains. A challenge in the public education system is to get fiscal funding and funding from the skills development levy working together. It is interesting to note that the occupational teams working within particular occupational areas have tended to project higher demand than projected in the models.

Perhaps there should be more collaboration with the Organisation for Economic Cooperation and Development (OECD). Given the evolving strength of data and the databases that are being developed, there is the potential to compare and cooperate. It would seem that there is the possibility to use scenarios in models to make projections. The way that data is organised into categories of occupations may be important. In the ADRS model there are nine broad areas of occupations that currently include 400 categories, which perhaps should be reduced to 100 broader categories. Work should continue to enable the model to be used in sectors and in comparing findings with other research outputs to build confidence in the projections.

MESSAGE FOR SKILLS PLANNING POLICY

This session highlighted the important role that modelling, scenario planning and forecasting can play in skills planning. Whether the country experiences low growth over the next ten years or whether higher levels of growth are achieved, this will impact significantly on absorption levels. Modelling can provide a reality check on projections based on other methodologies and can identify discrepancies between forecasts based on different approaches that may need further research.

SKILLS PLANNING: EVIDENCE FROM THE CHANGING NATURE OF ARTISANAL WORK AND OCCUPATIONS

Jean Gamble: What knowledge and skills does a 21st Century artisan need?

There is a lot of evidence that complex problem solving is the main skill employers require of artisans in the present, and will continue to require of them in the future. However, there is a need to define what this means. In order to do so, actual work processes must be examined. Four trades were studied to do so: boat building, mechatronics engineering, film production, and baking in the tourism and hospitality sector.

Looking at the example of boat building, the research found evidence that there are five different types of boat builders, each with a different proportion of design and build focus. But they all show a need for a certain set of skills. These include what might be called formal scientific skills and situational skills related to the type of boats being built and the techniques used in a particular company. Whilst in the future the demand in the labour market will be for a different mix of skills, depending on the type of boat building being done, the basic skills for boat building will remain the same.

The research on the knowledge and skills used in work suggests that in future, there may be a need to structure apprenticeships into three phases: foundational, intermediate and advanced. Alternatively, another approach could be to have one apprenticeship supplemented over time with short courses linked to ongoing occupational development.

Angelique Wildschut: How do we take the changing nature of artisanal work and occupations into account?

According to **Angelique Wildschut**, there is a need to take a step back and examine the fundamental changes brought about by technology and global pressures, but also, how it translates to change in the skills requirements within occupations. The nature of work is changing. The changes for a particular occupation can include changes to the organisation of work, the skills and knowledge required as well as the materials and tools used for work. This research focused on three artisanal trades: mechatronics trades workers in the automotive sector, millwrights in the metals sector and electricians in the mining sector.

The research found that there are real and perceived changes in the knowledge and skills required for artisanal work. In some industries, the tools of trades have changed with implications for the manual dimension of artisanal work. While artisanal work is perceived to have expanded and elevated in terms of its traditional scope of practice, the research found the organisation of work tends to reinforce traditional boundaries between occupations.

The research illustrates the complex relationship between work and demand for skills. Macro-economic parameters are important as well as the history and the current discourse on the evolution of the trade. Because of this, demand can be unpredictable, making planning complex.

Discussion

Varied comments were raised during the discussion period, including that global research on employability and soft skills has identified the need for people of integrity who have self-awareness and so on. What have traditionally been known as “soft skills”, are becoming quite critical. An artisan needs to speak well in English and be able to articulate oneself using technical language. People commissioning work increasingly make use of the internet and are, consequently, able to use such language; and, therefore, expect the tradesperson to be able to discuss the work. Nowadays, it is taken for granted that almost everyone has at least basic information communication technology (ICT) skills.

Boat building is an interesting example of the debate on the narrowness or broadness of qualifications. Does the differentiation of boat builders mean we need more qualifications? Or is this still one occupation with one set of qualifications? In addition, if we are planning for the provisioning of a boat builder (OFO code 684907), which of the five types of boat builder would be captured?

In general, there seems to be support for broader rather than narrower qualifications. However, there are challenges. The NCV is broadly a good approach to vocational training, but the demand from employers is *preparedness for the workplace* and this is not being achieved. When a qualification is too broad, the employer does not recognise its usefulness. Competency standards only have a meaning in context. If an artisan is not qualified they will not be able to move either within their trade or more broadly. They need the piece of paper; that is a qualification. They are entitled to a qualification that is recognised and has currency in the labour market. Employers take the issue of preparedness to a further level. They talk about *suitably qualified and experienced* being a requirement. This is problematic in terms of expectations of vocational education and training. However, at the same time, occupational boundaries are determined by qualifications. Work is on the one hand more structured but also more fragmented and difficult to define. Engineering has a very strong knowledge base. Present and future needs are similar. But many occupations are less well defined in terms of what knowledge is needed and this is partly due to changes in work and the changing nature of skills needed.

Regulation is another important aspect of defining an occupation and occupational requirements. Some occupations are regulated more than others. The more regulated an occupation, the easier it is to define the knowledge needed. Perhaps one of the answers is to settle for an initial qualification and then to focus on continuing development. Artisans are in the position of being qualified and competent once they pass the trade test, but will always need to catch up. The Film industry is one where patronage networks decide entry. Over-regulation can kill, but no regulation can be disastrous. In the area of film production there is no formal training and the expectation is that people will develop self-taught skills. This is unrealistic and so some industry regulation is needed.

Another issue that was highlighted in this session is the role of attitudes. Attitudes to work also impact on labour market decisions and behaviours. For example, there are unemployed people who do not want to take the available jobs. This shows that education and training is only part of the challenge/response in attempts to match supply to demand. Changing attitudes is not a training need. Societal issues also need to be addressed.

MESSAGE FOR SKILLS PLANNING POLICY

This session highlighted some of the challenges of artisanal training, both pre-trade test and post-qualification. It would seem that the traditional basic skills remain the same in trades that have been studied, but that occupational-specific and sector-specific changes are creating gaps. There are also huge changes occurring (particularly related to ICT development) but also in relation to "soft" skills. The design of occupational qualifications and the programmes to achieve them will require occupationally specific research and careful thought in relation to both the structure of the qualification itself and the ongoing professional development required to adapt to change.

SKILLS PLANNING: EVIDENCE FROM THE LEARNING PATHWAYS OF YOUNG PEOPLE

Servaas Van Der Berg: How do matric results influence access, field of study and progression through university?

The research created a new kind of dataset by combining data on the 2008 cohort of matriculates with the Higher Education Management Information System (HEMIS) data on their pathways through university. This study confirmed that of the learners entering schooling, 60% take the NSC, 37% pass and 12% go on to university. Of that 12%, 60% complete with only 40% getting a degree within a period of 6 years.

Access remains skewed in favour of whites and Indians, though Bachelor passes have a better representation of Africans. Inequality still exists in relation to progress of learners from different schools, with learners from lower quintile or poorer schools performing less well. However, the situation is much better when looking at Bachelor passes. In other words, once a person gets to university the disadvantage reduces.

One factor of note is that not all matriculants enter university the year after obtaining the NSC. Some take five years to get there. The higher the matric mark, particularly in maths, the better the chance of getting into university. Matric performance also impacts on dropout rates. Better performance in gateway subjects improves university performance but not as significantly as for maths.

The top universities attract the top matric performers and therefore have learners who perform better. Only 37% of university students that enrol in Bachelor's degrees, complete within 4 years. Others take longer to complete, if at all. Unisa has a lower pass rate for the same period (to be expected in distance programmes) at 11.3%. Overall, the dropout rate is 28% (less than is often assumed in public discussion).

Michael Rogan: Matching higher education and the labour market

Given the high costs of producing a graduate, it is important to examine data on where graduates go after completing their studies. Working with available data, there would appear to be mismatches that need further investigation.

Overall, the unemployment rate amongst graduates is below 5%, similar to the global picture. This rate is not increasing. The rate of unemployment amongst black graduates is also low, and there are gender and racial differences. However, more striking is that the risk of unemployment is impacted by the university where people study. The subject studied also has an impact.

Whilst there is clearly a need to match skills to the needs of the labour market and there are challenges in signalling that need to be addressed, there are also challenges that graduates face related to social networks. These are important aspects in relation to how people enter the labour market.

These are the conclusions from research in the Eastern Cape of the 2010 and 2011 cohort of graduates from two universities. Unemployment is three times higher for Fort Hare than Rhodes graduates. Graduates from certain programmes, such as teaching, experienced a lower risk of unemployment. Rhodes students are more likely to obtain employment in the private sector with Fort Hare students predominantly finding employment in the public service.

Disadvantages in schooling carry over into the labour market even for successful graduates. There is evidence of the need for signalling in this regard and to work on the accessing of labour market networks.

Discussion

There were a multitude of comments during the discussion period, including that employer attitudes towards recruitment can be influenced by a number of factors. For example, the current unrest could result in employers worrying about the respect that students have for property and the risk of employing people who may be implicated in setting fire to buildings. It would be interesting to explore whether black employers held different views and attitudes to white employers. Clearly, graduates do need to present themselves and acquire social and other skills to gain access to work opportunities.

The issue of previous disadvantage needs further exploration, for example, comparing learners from previously advantaged schools to those from independent schools through an examination of Independent Examination Board (IEB) results. Of the schooling population, 4% are in independent schools. The implication of current research appears to be that education alone cannot redress past inequalities. Issues of social class and access to networks related to socio-economic status are important. On the other hand, those graduating from disadvantaged schools may have a level of resilience that carries them through to higher education levels and employment. It is not a given that learners from better resourced schools always do better throughout their education than those from poorly resourced schools.

Some employers are of the view that they want well educated people, not necessarily skilled in a particular occupation. The CEO of Toyota recently claimed that he would train graduates if the universities could teach them to think. He argued that if the education system could teach learners to think, such people could be trained on the job once they are employed.

Some graduates appear to be accepting a lower income job initially to gain experience. The advantage is that they can then use their experience of actual work to convince employers that they can take on higher level jobs.

MESSAGE FOR SKILLS PLANNING POLICY

This session placed the issue of race and class as an important issue that needs ongoing attention in skills planning in the South African context. Black people and people from poorer backgrounds have a much harder time getting a good basic education and in particular attaining the maths competency required for certain university degrees. A majority of black and economically disadvantaged learners are affected by poor quality education in school. As such, there is a need to significantly improve school performance and outputs. These learners also find it more difficult to get work experience and gain employment relevant to their degree. This is partly because employers take account of the specific university attended, and partly the lack of access that such learners have to networks. However, once a person from a poorer background or township school does make it to university, they seem to fare better than is commonly believed. They are also finding work, and although this is not always the work they seek, the experience enables them to move into higher level work. These findings point to the need to address a number of factors that are not strictly of an education and training nature. Obstacles need to be addressed and it would seem that such students may need more time to achieve a degree to take account of the financial difficulties they face. Given the lack of networks, ways need to be found to communicate potential work opportunities and occupations in demand to learners at various stages. This highlights the importance of career

CURRENT CAPABILITIES: POST SCHOOL EDUCATION AND TRAINING INSTITUTIONS

Volker Wedekind: Employability and curriculum responsiveness in post-school education and training.

The focus of the research reported on by **Volker Wedekind** was on the “black box” of the complex processes inside institutions. It focused on employability and how education institutions respond to the challenge to enhance student employability. Four case studies were conducted in the sugar sector, the

forestry sector, the automotive sector, and in a number of universities of technology, in the areas of engineering, autos and agri business.

Traditionally, employability has focused on the soft skills a person needs to find work, complete a CV and job application, interview for a job, and understand some of the cultural aspects of work. There is also the notion of “employable skills” which is about a person having certain skills such as Information Technology competency or project management, which gives a person a skill to take into a job application. The research – both the literature and field work conducted - suggested the need for a more nuanced definition of *employability*: the ability of a person to find suitable employment; the ability to retain employment and take advantage of opportunities along career-paths (in other words, the capacity or ability to make changes); and the ability to achieve personal fulfilment. There is also an expanded definition of curriculum emerging where the totality of student experience is included, whether an intended or covert/unintended curriculum. Findings from the case studies include:

- The need to avoid the notion of employability as it is currently being used - particularly the notion of employability skills. These are not easy to understand and also not easy to teach as part of a vocational or occupational programme, as some of what is understood as employability skills must first be addressed as part of foundational education. Many students are not aligned to, or equipped adequately in terms of prior learning for, the occupational or vocational programmes for which they apply.
- Basic education standards are the elephant in the room. There is a need to confront this gap, as a lack of foundational education impacts on everything that labour market and skills development stakeholders are seeking to achieve. It is thus important that the Department of Basic Education participates in the discussion.
- Curriculum development should start from an examination of the work being done, what the skills needs are; from there, it is possible to work out where the skills should be acquired. This means looking at the different skills sets that can be built or added to before, during and after the programme leading to a qualification. In other words, curriculum must answer the question: what is the core knowledge to be taught and what needs to be learned in the workplace?
- There is a need to strengthen the relationship between the curriculum and what is learned in the workplace. Some industries think very carefully about what the person needs coming into employment and what they need to learn in the initial period of employment. In some companies, induction can take 6 months, where a person is inducted into the industry and company, exposed to the work required, and mentored. Work Integrated Learning (WIL) must not be viewed as an end in itself or something to be done to comply with qualification requirements. It needs to lead to a set of learnings that contribute to an occupation or to occupational competence.

- There is a need for a specific focus on the transition from education and training to work, including the support required by learners, new entrants and employers. While the NCV has a life skills component in the curriculum, the frame is being a student, and so it is not contextualised in the workplace. This part of the curriculum only becomes real at the point of employment. So timing and scheduling of the curriculum is important.
- It is important to focus on strengthening partnerships and networks. Partnerships between education institutions and others are critical to the success of students. Successful ones are those that are genuine and where education and training institutions provide real input and engage employers. Employers in these partnerships trust the providers. Understanding and trusting the process is more important than having a formal input into the qualification. Once the trust is there the employer steps back and supports the process. So relationships are more critical than the formal process of involving employers in the development of curriculum.
- SETA offices need to be strengthened. There are SETA offices in TVET colleges but their role is not always clear and not always what is needed. They need to be strengthened in terms of their intermediary role, to facilitate the relationship between the college and the employers. This means not just focusing on placement but also on supporting the relationships needed for effective learning in the workplace.

Michael Gastrow: Institutional responsiveness and labour market intelligence.

This research looked at the responsiveness and alignment between firms and education and training providers, in the automotive and sugar industries, and the Square Kilometre Array (SKA). A qualitative systemic approach can be applied to inform suggestions on supply and demand alignment. There is a need to understand the issue of supply and demand in terms of a system that is complex. Modelling the selected sector as a system, the research explored who the main actors are - firms, education and training, private and public intermediaries – the interaction between them, and their institutional contexts.

The research focused on examining different approaches to improving the communication between the two sides of the labour market and on the capabilities needed to successfully interact with stakeholders. These can be defined as *dynamic interactive capabilities*.

One of the general findings is that intermediaries are important. Industry associations in particular can play an important role in mediating between formal education institutions and individual employers. There are differences in the industries studied. For example, the sugar industry has set up its own college, and have developed a private sector solution where there is ownership of the curriculum and a lot of trust. The public education system is left out, pointing to the need for public TVET colleges to build interactive capabilities and for greater coordination between public and private role players.

In the auto industry, good coordination has been brokered by the Manufacturing, Engineering and Related Services Sector Education and Training Authority (MerSETA) and its stakeholders. However, there are difficulties in adapting to changes in the value chain, and the focus is not on the future, or developing skills for growth.

The SKA has achieved close cooperation and interactions between stakeholders, including government departments and institutions (science councils and research foundations), industry, and universities. This has resulted in high levels of support and funding. In addition, the SKA has developed good interactive capabilities. However, the research highlighted a constraint related to changes in undergraduate programmes, which did not have the content needed for SKA. There was also a bottleneck in Home Affairs where people with relevant skills were not assisted to enter the country.

Finally, it would appear that the strengths of the SKA could be rolled out to other sectors. The strong coordination within SKA and with SKA stakeholders is something that can be replicated within other projects and programmes.

Discussion

There was varied discussion following the presentation. One commentator remarked that there is definitely something to learn from the Department of Science and Technology (DST), the science councils and the relationships with science and industry stakeholders such as those experienced in the SKA project. If the SKA can succeed, then focusing on what worked would be useful in other projects.

However, there is a major challenge in relation to guidance given to students who seem to deviate from their chosen career paths. It would seem that in addition to advice, they need preparation for the challenges of their career so they can keep to their plans. In many occupations, there is a need for a high degree of readiness, and people with skills, and a good knowledge of their sector. Students also struggle with budgeting and other issues that can affect their ability to stay on track. The preparedness issues must not be viewed as purely a curriculum challenge. We may need to consider additional modules, but equally important, is practical support. This requires a level of capacity as there is limited capability to provide effective guidance. Funding is needed for this. Larger companies do have capacity, including Human Resources (HR) and Human Resource Development (HRD) sections that can do what is needed within their companies. However, the challenge is with smaller companies and entities where there is no such capacity. Provision must be made for such support.

A challenge is emerging in TVET colleges where attempts are being made to deliver to the needs of sectors with 21 sets of SETA qualifications. SETAs are seeking to switch from private to public colleges, and to implement new forms of accreditation. Currently, college funding is based on NCV and NATED courses

rather than occupational qualifications. Colleges will need additional funding and capacity. Perhaps the DHET strategy of assisting colleges to become *centres of specialisation* may help address this. And perhaps colleges should focus on a small number of occupations and not try to do everything.

The HSRC has recently produced research into partnerships. Partnerships are an important area of work for SETAs. There are curriculum implications and we need to consider how education and training can assist in developing such capabilities. It is important to learn from what works and also what is not working so well. For example, in the sugar industry what can be learned from the failure of the public system to engage with firms? Looking at the role of intermediaries, it will be important to explore the extent to which they are effective for both large and small enterprises. Small firms tend to rely more on industry bodies, and also depend more on networks to get information when they need it. The case studies revealed that small panel-beating firms and tyre changers had almost no awareness of qualifications. They recruit based on networks and do training on the job. Colleges do not serve their needs. These issues need to be explored further in research.

MESSAGE FOR SKILLS PLANNING POLICY

This session pin-pointed important challenges that need to be addressed in the transition of a learner from education and training to the workplace. There is a need to clarify what can be taught in the formal education environment and what needs attention within a workplace context. This needs to be done industry by industry and for each of the main occupations. More work is needed in developing and promoting well-structured workplace learning experiences (e.g. structured internships or periods of induction). There are a range of skills and capacity issues related to partnerships and relationship building that need to be addressed, particularly in SETAs and industry bodies. Relationships of trust between education institutions (public and private) need to be built so that there is confidence in programmes and that the individuals entering jobs meet employer expectation.

PANEL DISCUSSION: CURRENT INITIATIVES: GOVERNMENT

How is government anticipating current and future skills needs in the country?

In this session, representatives of government departments involved in skills development provided an overview of their work to address supply and demand challenges. Government panelists were: **Jocelyn Vass**, DTI; **Rudi Dicks**, Department of Planning, Monitoring and Evaluation (DPME); **Phindiwe Mbhele**, Department of Home Affairs (DHA); **Hersheela Narsee**, DHET; **Engela Van Staden**, DHET Higher Education Branch; **Gerda Magnus**, DHET TVET Branch, **Ashwani Aggarwal**, International Labour Organisation (ILO).

Key client or beneficiary stakeholders were then given the opportunity to raise critical questions for engagement: **Enver Motala**, Nelson Mandela Metropolitan University (NMMU), Centre for Integrated Post-School Education and Training (CIPSET) and Education Policy Consortium (EPC); **Mvuyisi Macikama**, National Skills Fund (NSF); **Percy Mongalo**, National Skills Authority (NSA) business representative; **Eureta Rosenberg**, Rhodes University.

The intention was to explore current areas of collaboration across government, what has been achieved, as well as challenges going forward.

Engela Van Staden explained how DHET is working on the production of graduates in consultation with universities. There is consultation and collaboration between departments, and there is a focus on achieving what is possible, affordable and sustainable. Feasibility studies are becoming an important aspect of planning, with all new institutions being required to produce one. A differentiated approach is being used, and there is no expectation that each university must do everything. The aim is to build on existing capabilities and achieve a critical mass. For example, NMMU, Cape Peninsula University of Technology (CPUT) and Durban University of Technology (DUT) focus on the maritime and blue economy (Phakisa). Production of professionals has to be done as part of partnerships - industry, professional bodies, universities and the relevant departments need to partner to achieve agreed goals. For example, there is a plan for producing engineers, with the enrolment plan coming from a collective of stakeholders and including different types of engineers having different targets. The health agenda is very different from the agenda for other areas of government service delivery or societal development. Professional accreditation is an issue that needs a multi-stakeholder approach.

Gerda Magnus outlined the recent history of public TVET colleges. Until the shift to DHET was completed in 2015, the colleges used to report to Members of the Executive Council (MECs) of education in provinces. The 50 public colleges have 260 campuses which are intended to become more responsive to local needs. However, an analysis of programmes shows that the menu offered is limited.

There is very little provincial planning to respond to regional variations. For example, in KwaZulu-Natal logistics skills are very much needed, but the training available is for managers, not technical people who are so badly needed.

The challenges hampering the colleges in their attempts to fulfil this important role include: inadequately trained lecturers; the limited programmes on offer; and lack of funding for occupational programmes. SIPs have demands that the colleges are trying to address. The intention is for colleges to develop into *centres of specialisation*, and DHET is currently focusing on what the colleges need to do to become such centres. There is a need to create incentives for colleges to deliver different types of programmes. There is a lot of thinking about funding occupational programmes through the fiscus. However, there are tensions between national, provincial and local planning and responsiveness that need to be managed.

Hersheela Narsee described the approach of the DHET planning branch. The main purpose of skills planning is to ensure the supply side meets demand. The focus must be to ensure that the PSET system meets needs. There is a need to plan to ensure there are not only sufficient teachers and doctors, but also that the building and trades occupations have sufficiently skilled human resources. This will enable the country to build much needed infrastructure and develop the economy. Specific work includes: the LMIP project itself, which started in 2012 to kick start the understanding of the demand side of the system; the establishment of a dedicated skills planning unit within the DHET; the development of a list of *occupations in demand* (informing not only planning, but also critical skills visas for foreign nationals entering the country with such skills); careers development – a range of services aimed at improving information on careers to labour market stakeholders.

Planning involves some difficult decision-making. Must more funding go to different levels of the system? The economy needs both high and middle level skills, but the contribution of TVET is not as great as that in higher education. What does that mean for planning? Do we keep spending more on higher education or invest in making the TVET system more effective? These are difficult choices.

Discussion

Participants raised various points during the discussion. It is very helpful to have a department addressing all of PSET, as this means being able to look holistically at the entire post-schooling system. The benefit is that the strategy will include SETAs and community colleges who will serve a large client group. The South African Qualifications Authority (SAQA) and the NQF provide a link between all components of the system. The Quality Councils, the National Skills Fund, the National Skills Authority, and the HRD Council all play a role. All the institutions and funding as well as policies (such as for articulation and RPL) are under one roof, and all the levers are there to shape a quality post-schooling system.

Again, one of the major challenges identified is the schooling system. The dependencies within the post school system and between the PSET and schooling systems are critical. It will be important for the DBE to be part of this process, particularly as the DBE is embarking on a process to create three streams, including Technical Vocational and Technical Occupational schooling.

When talking of vocational and occupational planning, DHET is only part of the system. In the agricultural sector, there are colleges that address sector needs, there are nursing colleges, defence and intelligence have institutes to develop professionals in their fields, and so on. There are overlaps and tensions across parts of the system, and there is a need to discuss how to function in a situation of contradictory legislation.

Mechanisms differ to manage these overlaps. With DST, there is a formal memorandum of understanding (MOU) addressing the focus of joint work and the contribution of the DST and DHET, including an agreement on production of PhDs. In Health, there is a quarterly committee meeting. There are academic hospitals located and funded in provinces, but one of the planning challenges is to produce people that get employed. For some time, clinical associates were produced but no placement was possible. Nurses were qualifying but no posts were funded for them to be employed. With DBE, there is a joint process to review HE studies for teachers, which is working well. Teacher supply has improved and funds have been identified to achieve this, via the National Student Financial Aid Scheme (NSFAS). There is an overlap between TVET and DBE on vocational and occupational programmes, and an inter-branch committee on skills planning has been tasked with addressing this.

The third National Skills Development Strategy (NSDS III) gave direction to SETAs and colleges to work together. A comment was made that the ability to plan is there; it is not always done or may not be done in the right way, but progress is being made.

Jocelyn Vass outlined the DTI perspective. When the DHET came into being in 2009 there were tensions over where skills planning should be located. Some of the critical questions emerging were: Was skills planning a function of the economy and therefore something to be located in one of the economic cluster departments, or a function of the education and training system and therefore located there? There is a need to look at this again and check whether the objectives are being achieved. The challenge is one of intra-system coordination – ensuring progression between the parts of the system. This remains a challenge as citizens can still not move easily between and across sub-systems.

The problem in the system is not only one of skills supply and demand. An example was given of a non-skills problem: in the steel industry, there was dumping by the Chinese and a MITTAL pricing scandal that took place at the time the South African steel industry collapsed. An additional comment was that in situations such as those faced in certain sectors, it will never be possible to match supply and demand.

The DTI explores opportunities and identifies which sectors to develop to achieve a competitive edge. The services sector is expanding and this provides opportunities. However, from time to time commodity prices collapse which impacts on volumes of produce and therefore the level of absorption of qualified people into production. The country cannot continue to allow the economy to be dependent on commodities. Manufacturing is important but there is a need to target and not look at all occupations in manufacturing. The national tooling initiative assists in several sectors. A comment was made that there is a plan to replace imports.

Every sector is different. The approach in each sector must be specific and focus on what is needed to expand and achieve inclusive growth. What is important is to have a holistic approach, and not just focus on education and training.

Rudi Dicks observed that government tends to be inward looking. Interactions with industry and the private sector are insufficient. The DPME is the custodian of the NDP. Even though there are constant changes in the economy, NDP attempts to provide a long term vision, and forecasting of skills for 2030. The NDP incorporates what all departments are planning, and its planning process brings in stakeholders from outside of government. However, a caution was raised that not enough time is spent interrogating and understanding the NDP.

A comment attributed the problem to the education system. When there are poor throughput rates, there is a need to intervene, rather than wait to address these problems as part of skills planning. The NDP conceptualises skills as integral to development planning, where the aim is to be able to look ahead to the needs of the economy in 5, 10 and 20 years' time.

Phindile Mbhelu outlined the challenge faced by the DHA in facilitating the movement of people into the country. A key role is to facilitate visas for industries to bring in needed skills. Another is to enable foreign students to come to the country to study and to facilitate academic exchanges. The presenter commented that while publishing an annual critical skills list is important, the terminology is creating confusion. The DHA is now engaged in an inter-departmental process to develop a list of *Occupations in Demand*. It is based on what the economic cluster departments call skills that are critical to the economy and what the DHET used to call scarce skills. DHA uses the list to determine who can enter the country and then provides documents to enable migration.

Globalisation is having an impact on movement of skills. CEOs and call centre staff need language skills. Another challenge is to attract high skilled people who are in demand globally. However, there is also the need to manage the movement of people in low skilled jobs, particularly in the Southern African Development Community (SADC) region where there are agreements in certain sectors. For example,

domestic workers from Lesotho need visas. Special permits have also been developed for undocumented migrants so as to enable them to open bank accounts. Permanent residence is being offered to foreign students who are graduating in critical skills subjects. There is a bit of a balancing act whereby South Africa seeks to attract people with requisite skills, whilst at the same time playing a role in training skilled people to go back to their own countries and take part in regional development.

The DHA is working on repositioning its work in alignment with the 2030 NDP vision. There is a need to look ahead to the next phase of the digital revolution, the use of drones and what their use might mean. For example, could drones police borders? There is also the silent revolution taking place in the ocean economy. Amongst other things, this means that there will be a need for welders who can work under water. The challenge is to anticipate need and to structure the visa and permit regime to be flexible to meet future needs in the economy.

DISCUSSION ON QUESTIONS RAISED BY THE STAKEHOLDER PANEL

Percy Mongalo representing business observed that government always seems to want to start again. When new political leadership comes in there is no reference to what happened before. It is noticeable that currently the talk is about NDP, but the Accelerated and Shared Growth Initiative for South Africa (ASGISA) or the Joint Initiative on Priority Skills Acquisition (JIPSA) are not discussed at all. Some problems – for example, the bias of employers to recruit from older universities - remain from long ago. The commentator asked why we are starting afresh with research only to come with the same problem statement. Why not focus on doing something?

Rudi Dicks agreed that this is a challenge. It is essential to look at what has been done in the past. The lack of continuity is a challenge, as is the way that government is arranged in silos. We need to ensure that the LMIP data is integrated and used to effect change.

Jocelyn Vass pointed out that a government-wide planning and monitoring and evaluation framework is in place that sets out activities, inputs, outputs, outcomes, and intended impact and then measures progress against these. The intention is to look at the long term. However, the focus tends to be on outputs more than outcomes and impact. There is a need to look at what impact an intervention has had. One of the challenges is that outcomes are determined to some extent by what others do – they are not entirely in the control of those who plan for them. There can be perverse and unintended consequences when implementing plans. There is also a need to look at how people are incentivised to focus on outputs not outcomes.

Mvuyisi Macikama from the NSF stated that small and medium enterprises have been major contributors to employment and revenue generation, and asked what programmes are in place to promote entrepreneurship?

Engela Van Staden reflected on the process initiated by the Human Resource Development Council (HRDC) on entrepreneurship, what was meant by this and what the HRD system could do. In schooling, entrepreneurship is now part of Grade 7 programmes. In universities, there is a degree in entrepreneurship but there is scepticism as to whether this qualification is likely to produce entrepreneurs. There is a need to integrate entrepreneurship into the programmes/curriculum of subjects where the potential for small business development exists. There is a project with the University of Johannesburg (UJ) to look at best practice in universities. There is a need to examine how work integrated learning (WIL) and entrepreneurship is being integrated and then develop a community of practice.

Hersheela Narsee spoke about the Davis Tax Committee report that touches on SETA processes and how they impact on small businesses. The workplace skills plan (WSP) submission process is too complex and not friendly to small businesses in relation to accessing the mandatory grant, which in turn leads to problems accessing discretionary funding for training. Small businesses are effectively funding training in large companies. **Hersheela Narsee** commented that the Department is planning to simplify the grant application process and make the WSP a simple data collection tool.

Jocelyn Vass argued that small and micro enterprises are key to future employment and income generation. Often there is just one person who is the manager doing operations management, financial management and people management, and it is unrealistic to treat them as large companies that have people focusing on the different functions. The DTI is developing incubation arrangements that enable training over a 12-month period. Sometimes the incubated company becomes dependent. Getting a balance between support and assistance on the one hand and over-protecting and creating dependency on the other is not easy. There is also a need to train graduates who have business management skills. The DTI is looking at management assistants who can help make enterprises more sustainable, but also to show the expertise learned in a Bachelor of Commerce (BCom). Entrepreneurship requires risk takers and people who have certain attributes. There is a need for an internship or similar programme to address operations in production.

Ashwani Aggarwal described how the ILO has many programmes in place with national and provincial government to support entrepreneurs and small businesses. The ILO experience indicates that there is a need for entrepreneurship to be part of the curriculum from early in schooling and for it to be returned to at different stages. There is also the need for work experience, mentorship, and financial support. The assisted companies have to compete with established businesses.

Discussion

A comment was made that the plan to simplify WSPs and annual training reports (ATRs) is welcomed, although SETAs may be reluctant because WSPs are so important in the process of developing Sector Skills Plans (SSPs). Workplace training is important but current incentives seem not to work. For example, workplace committees are non-functional.

Enver Motala described the work of CIPSET, working with unemployed young people whose prospects of employment are low as they have limited skills needed in the economy. They are generally women and some men trying to do useful work to sustain themselves. They do not appear in data and are largely hidden from view. The question becomes: how can the current framework for skills planning and employability in the formal labour market be applied to those people located outside of that market?

Ashwani Aggarwal expressed the view that this is the most important issue for developing countries. The challenge is that formal institutions do not cater for the informal economy. The ILO has developed a methodology for approaching communities and local economic development which should be considered. Training focusing on rural economic empowerment is provided; this has been successful in Zimbabwe and Mozambique. In addition, a partnership approach is adopted to build capacity in communities and to identify local economic opportunities for job creation. The view is that it is critical to build local capacity for development.

Hersheela Narsee agreed. The informal sector is the Cinderella of the system, and the NSF must help make this happen. The Department is attempting to rethink how the community college system can address the issue of sustainable livelihoods through training provided locally, while community colleges are looking at the types of skills needed in their locality and how to address them. The process of developing colleges to play such a role is embryonic at this stage, but the vision is for TVET colleges to play a significant role.

Rudi Dicks agreed that what is in place for the informal sector and the unemployed is relatively weak, and commented that the situation facing low skilled people is not good. Even in the formal sector, the security of employment of low skilled people and their wages are very low. Even reasonably well qualified people are conscious of the need to get formal work experience, as demand is low in the economy and experience is favoured by employers when recruiting. People are often forced to accept lower skilled jobs in order to get a foothold in the labour market.

Jocelyn Vass argued that there is a lot of work being done that is regarded as informal, however, it should not be classified as such. For example, there is productive work being done, people are collecting wood and water, and such people are not included in labour market data. Women and their work are largely invisible. She commented that there is a need to look at how grants are provided and the conditions that are

attached. There is the potential for formalising some of this informal economy work. She questioned why people being trained to cut wood in the forestry and wood products industries are seemingly not able to start a business providing firewood? The same with some of the caring work being done. There is a need for a social work assistant or some such role that recognises the contribution being made to care in communities.

Eureta Rosenberg identified another key issue for skills planning in future. Historically, there has been the need for a critical voice from the environmental sector. Nowadays, the sector is less critical, as there have been some good responses and some significant initiatives related to the environment and its preservation and protection. But the question then becomes: where to next? There are huge employment opportunities but as yet, not the required coordinated response across government. In 2009 the Green Economy Accord to create green jobs was signed. Young people in particular want to make a difference. However, they struggle to find structured pathways into these types of meaningful work opportunities. There are jobs in industries that are not sustainable and so alternatives are needed, but it is unclear how people can be reskilled. The EPWP programme is working in that direction. The job opportunities offered span such areas as waste and energy. Often the jobs fall between the cracks because they are sector-bound. So the question to the panel was: What mechanisms do we have to plan across sectors? And a related question was: If such mechanisms do not exist, what next?

Engela Van Staden advised that engagement with Operation Phakisa is producing some results. There are many aspects of the project or programme and each must be examined. There is a skills working group in place in which colleges, universities and industries are involved. The process should result in a skills strategy map. The skills will be documented and an estimate of the numbers required for each aspect of the programme will be produced to assist in planning.

Rudi Dicks agreed that particular skills are needed, but the challenge is to integrate skills needs into qualifications and programmes. Some green jobs will be in engineering-related occupations. He added that the basic occupational qualification will remain engineering, with no need for a new qualification. Rather, what is needed is the integration of new skills linked to the environment into the existing qualifications. Government has a target of 1 million houses to be heated using solar panel technology. The DTI is driving a process to enable the 1 million units to be locally produced. However, the skills are needed to do that. Acid mine drainage is another complex issue, and a particularly big problem in Gauteng and in the Vaal basin. New skills are also needed to address this.

Ashwani Aggarwal described a global study conducted by the ILO, which included a case study on South Africa. It found that the environmental changes and agenda will impact all occupations. In the education sector, this includes curriculum and teaching capacity. If planned well there should be a net positive impact

on jobs or at least no net loss. There will be some new jobs. To accomplish this, many sectoral ministries will need to work together, and so improved coordination and capacity building is needed.

Jocelyn Vass agreed, saying that some sectors lend themselves more than others to green jobs. She cautioned against excluding coal mining, as new technology could result in clean coal. Job classifications may also change somewhat in response to this agenda.

MESSAGE FOR SKILLS PLANNING POLICY

This session enabled an understanding of the complexity of coordination and alignment across government. Much is being done in the different departments to address society-wide challenges such as youth unemployment, the informal economy, small business development, the green economy, and other issues that are part of the skills discussion, but also part of other policy area discussions. From the inputs and discussion it is clear that there has been significant collaboration between departments on a range of issues and that substantial progress is being made that is acknowledged by stakeholders. These are all assisting the skills planning process and so need to be taken forward and developed further. Partnerships and coordination of work across departments, as well as engagement with those representing the intended beneficiaries will be an important focus of attention in the future.

CONCLUDING SESSION: CRITICAL OBSERVATIONS

John Buchanan was asked to share his critical observations as someone from outside of the South African system, with global experience.

He observed that there has been a good discussion around the question, “Planning for what?” There is a wealth of data, information and analysis, and there is a good sense of what is needed. There may be a question of whether there is adequate stakeholder engagement, but the process may also need more stakeholders.

Using the metaphor of aviation, he suggested that in order to work together and bring coherence to the system, one has to consider the impact of high level powerful forces, uncertainties, and the functioning of current systems and immediate challenges. Thus, in the long run, there needs to be consensus on overarching scenarios that need a coherent effort across various national systems to be addressed adequately. He gave climate change, technology, global financial security and domestic corruption as an example of overarching scenarios.

Perhaps what is lacking is the narrative of where things now stand. This is necessary to take things forward, and there is also a need for structures. Three teams were suggested:

- Managerial, professional and technical level - universities and professional bodies need to engage.
- Middle or inter-mediate level skills: agriculture, building (is it necessary to rethink the concept of apprenticeship?).
- Basic education - the most conspicuous absence from the discussion.

The other issue is ownership or championing – there is a need for a custodian for a new workforce development settlement. HSRC and the research community can take this on as a facilitator. But some long-term ownership is needed because government priorities change and personnel in leadership in government come and go. There is a need to achieve a level of consistency over time.

It is important to accept that no one agency can solve the skills challenge. Research is integral but action is also needed. **John Buchanan** suggests that a start can be made by addressing some of the most pressing problems. A good foundation has been laid and now the focus must be on building a long term sustainable set of structures, processes and relationships.

CLOSURE AND WAY FORWARD

The HSRC concluded the colloquium by acknowledging the work of everyone throughout the system. LMIP is not the skills planning mechanism but has provided the research needed to inform government planning and decision-making. Four years ago, the point was made that the process was not starting from scratch. The intention was always to build on work that had been done before. The LMIP team members believe they are self-critical and accept that coordination and alignment are not yet where they need to be.

What next? The idea was to develop research to contribute to a credible institutional mechanism for skills planning. The question might be: who will use the research? One recommendation arising from the colloquium is the establishment of a skills planning unit in government. Government has to lead on this. While DHET is driving the process, it is clear that skills' planning requires greater engagement with demand side role players (economic departments and industry).

A final suggestion for taking the process forward would be to take people away for a long planning session – similar to processes during Operation Phakisa - so as to work out who does what and how to get alignment. Alignment, coherence and coordination are critical.