

**'The Role of Universities in Improving the
Pipeline to Universities and the World of Work'**

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Introduction

Ms. Marianne Scott and officials of the National Business Initiative (NBI), colleagues, ladies and gentlemen, molweni, good morning

Thank you for the invitation to address this NBI breakfast on *The Role of Universities in Improving the Pipeline to Universities and the World of Work*.

I intend to do so, but want to at the outset declare that if you are looking for elegant solutions and quick fixes, there are none. Instead, I want to identify and discuss the *challenges* that are associated with improving the pipeline of students to universities and graduates to the world of work. The task is for universities, government and the business sector to honestly discuss the challenges with a view to collectively developing appropriate interventions.

It should be obvious that there is a connection between the pipeline of students to universities and the pipeline of graduates to the world of work. To the extent that as universities we are able to increase the *number* of secondary school students that are able to attend and succeed at universities, there will necessarily be an enhanced flow-through of graduates from universities to the world of work.

However, there are some important riders. First, it is not simply a matter of the number of secondary school students but also, critically, about the *quality* of secondary school students that enter universities. Second, there is no guarantee that both an increase in the number and quality of secondary school students entering universities will automatically ensure a greater *quantity* and *quality* of graduates for the world of work. It depends on the *fitness for purpose*¹ and *fitness of purpose*² of our universities. That is to say, it depends on the capacities, capabilities and effectiveness of our universities to produce graduates with the requisite knowledge, expertise, competencies, skills and attitudes required by schools and the world of work.

¹ Fitness for purpose relates to the effectiveness of universities in relation to agreed upon institutional missions within a national policy framework that emphasises the differentiation and diversity of universities.

² Fitness of purpose framework relates to the efficacy of universities with respect to defined national, regional and local social and economic goals, priorities and targets.

Improving the pipeline of students to universities

To begin with the question of the role of universities in improving the pipeline of students to universities, there are two issues that worth noting.

The first is that despite almost universal formal participation in schooling, our schools continue to evince significant problems related to drop outs, retention, progression and successful completion. 2 out of 10 students drop-out after Grade 3, 4 out of 10 after grade 9, 6 out of 10 after grade 10 and 7.3 after grade 11, so that only just little more than a quarter of the students that begin grade 1 complete grade 12 (DoE, 2008:21).

As has been noted, 'the simple reality is that enrolment is not the same as attendance and attendance does not imply learning' (Sayed, 2007:8). South African school students perform extremely poorly on a range of international assessment tests, in terms of which '65% of school leavers...are functionally illiterate' (Sayed, 2007:6). In the 2003 TIMMS study 'only 29% of South African 8th grade students were able to answer correctly a basic subtraction question. Random guessing would have yielded a 25% correct answer' (ibid:6).

One measure of our formidable challenge is that currently 10% of our secondary schools – the independent and Model C schools - produce 60% of all (total of 86 531 in 2005) senior certificate endorsements. Another 10% of the historically black schools, which include the Department of Education's Dinaledi schools, produce a further 20% of all senior certificate endorsements. Thus while 20% of secondary schools produce 80% of senior certificate endorsements the remaining 80% of secondary schools produce only 20%. Moreover, the number of secondary school students that achieve matric endorsements (in 2006 85 830 out of 528 525) has yet to reach the level achieved in 1994.

It should be clear that the fundamental challenge is to improve the quality of education in schools. Resources for equity of access for poor students, targeted nutrition programmes, facilities and the adequate remuneration of educators are important, but they are not a sufficient condition for effective schooling and education. There are also a number of other necessary conditions.

One is to ensure that there exists a culture of effective learning and teaching and where this is absent to move diligently restore this culture. A key element here is purposeful and effective educational leadership and management on the part of a range of actors that include the Ministry of Education, provincial ministries, district offices and, especially school heads. Indeed, it is argued that a key distinguishing feature between the 10% of the historically black schools that produce 20% of all senior certificate endorsements and the other 80% of public

secondary schools that produce only 20% is effective leadership and management.

A second condition is 'qualified, motivated, and committed teachers', who are 'the single most important determinant of effective learning' (Sayed, 2007:7). A third is the availability of high quality learning material and textbooks. It is argued that '(e)ffective assessment is (also) at the heart of ensuring that learning is effective', and that '(d)eveloping robust monitoring and assessment systems to monitor student performance is key to improving learning'. Finally, it is suggested that 'the more schools are held to be accountable the more effective they are', which raises the importance of efficacious school governing bodies (ibid.).

If, these are indeed the necessary conditions for effective education and schooling, then it is necessary to honestly debate whether, to what extent and in what percentage of South Africa's schools these conditions are in place. If they are not in place or are in place in only a small proportion of our schools, we must confront why this is so, and not abjure certain hard questions.

These hard questions include:

1. Whether, as leaders, managers and educators, we fully comprehend the importance of knowledge and education and the profound intellectual, moral, political and organisational responsibilities associated with educating our people.
2. Whether we fully grasp what is at stake and the implications of our choices, decisions, actions and non-actions for our society and current and future generations?
3. Whether we have in place the essential value orientations, policy frameworks and policies, strategies and mechanisms to progressively realize our transformation and development goals? Are these substantive and material as opposed to largely symbolic in nature; good words and intentions but little in the way of effectual interventions and practices!
4. Whether we have an effective and efficient developmental state in the domain of education at national, provincial and district levels, with a public service that possesses the educational know-how and leadership, management and administrative capabilities to support schools?

Despite some achievements we continue to be plagued by various stubborn and persistent realities that thwart the realization of constitutionally and legally enshrined educational imperatives and goals. It is necessary to openly acknowledge failings, shortcomings and weaknesses, honestly identify what accounts for these and creatively and courageously confront them. Unless and until we do this we will continue

to deny millions of South Africans an education that develops their capabilities and affirms and advances their human and social rights and we will block a key avenue to social transformation and development. As it has been noted, 'although education cannot transform the world, the world cannot be transformed without education' (cited in Chisholm, 2004: 13).

The second issue to be noted is that the theme of 'the role of universities in improving the pipeline of students to universities' implicitly assumes that universities *have* a role to play. There are, however, academics that would strongly contest this assumption and argue that universities have *no* role to play in schooling, beyond the formative preparation of teachers through faculties or departments of education and through in-service professional development programmes.

I want to develop this line of thinking through a conversation with Professor Sceptic. In Professor Sceptic's view, the development of effective schools that produce high quality students is principally the responsibility of the state and government. Universities, further, should confine themselves to educating students that possess the abilities to cope with the rigours of higher education. Ill- and under-prepared students, even if they have passed matric and qualify to attend universities, according to Professor Sceptic, should not be permitted to enrol at universities and selection criteria and processes should ensure that this is indeed the case.

In as much as you may disdain Professor Sceptic's thinking you cannot simply trash it. First, he is correct that the students that enter universities must possess certain minimum abilities if universities are to effectively fulfil their core social purposes of producing knowledge and high quality graduates. We cannot quarrel with him that students must be *qualified* to attend universities – indeed, laws prescribe this.

Second, universities are expensive institutions of higher education and professional development and training. The desirability, advisability and efficiency of universities allocating considerable resources, and highly qualified scholars devoting significant attention to, ill- and under-prepared students at the expense of research and other teaching activities must be a matter of debate.

Third, although ill- and under-prepared students may formally qualify to attend universities, should all universities necessarily be required to admit such students? On the basis of the principle of institutional autonomy, the *Higher Education Act* of 1997 places student admission under the authority of universities. This means that universities are free to determine their admission policies, criteria and processes and which

students they will admit, and are permitted to exclude students that they consider to be ill- and under-prepared³.

South African universities have differing admission policies, criteria and processes and admit widely varying numbers of ill- and under-prepared students. In a context where the necessary institutional resources and capabilities do not always exist to effectively support ill- and under-prepared students, there are obvious consequences for pass, throughput, graduation and drop-out rates and the quality of graduates produced.

Contact undergraduate success rates should, according to the Department of Education (DoE), be 80% "if reasonable graduation rates are to be achieved" (2006a). Instead they average 75%. White student success rates in 2005 were 85%, while African student rates were 70%. The DoE's target for throughput rates "is a minimum of 20% which would imply a final cohort graduation rate of about 65%" (ibid). Instead, throughput rates for 2000-2004 were between 13% and 14%, and the cohort graduation rate was 45% in 2004. In the same year there was an overall drop-out rate of 45% (DoE, 2006).

The questions of qualifications for and admission to universities raise a further important issue: namely, whether there is a sufficient range of post-secondary institutions in South Africa to accommodate the varying abilities and inclinations of students with matric passes, since universities do not exhaust the possible kinds of post-secondary institutions that can exist. Some will argue that certain students with matric passes and ill- and under-prepared students with the qualifications to enter universities may be better served by other post-secondary institutions.

Finally, Professor Sceptic will mount one further challenge to those who assume that universities have a role to play or believe that such a role is self-evident: namely, to *explicate* the role of universities.

We could rise to Professor Sceptic's challenge and explicate the role of universities in improving the pipeline of students to universities in the following ways. First, being solely responsible for the formative education and training of school teachers, universities have a vital role to play in ensuring that the graduates that enter the teaching profession are well-equipped with the knowledge, expertise, competencies, skills and attitudes to discharge their important responsibilities to educate the children and youth of our society. Professor Sceptic will agree.

³ However, the 1997 White Paper emphasised that there was "no moral basis for using the principle of institutional autonomy as a pretext for resisting democratic change" and that institutional autonomy was "inextricably linked to the demands of public accountability" (DoE, 1997:1.24).

Second, it is also to the universities that our society largely looks to ensure the continuing professional development of teachers and school managers and administrators, and therefore an important additional responsibility of universities is to ensure that these personnel are supported to effectively execute their tasks with respect to curriculum, pedagogy, assessment, management and administration and the like. Professor Sceptic will say “no disagreement with that”.

Third, it is the graduates of universities that the public service in education acquires its officials, and it becomes incumbent on universities to produce high quality graduates to undertake the important tasks of effective policy development and implementation, and management and administration of schooling. Professor Sceptic will say ‘I wholeheartedly agree that this is an important function’.

Fourth, through rigorous and critical research into the economics, politics, geography and sociology of schooling that is self-initiated or commissioned by the state, business sector or other agencies, as well as through policy research on the governance and financing of schooling, curriculum pedagogy, assessment and other issues, universities have a crucial role to play in facilitating effective public schooling. Much the same could be said with respect to the production and publishing by academics of school texts and teacher and learner support materials. Professor Sceptic will agree.

In summary, Professor Sceptic will not disagree with any of these vital roles and contributions of universities, all of which have the potential to improve the pipeline of students to universities. On the contrary, he will say that all these roles accord very well with the core research and teaching purposes of universities.

Professor Sceptic could then turn to me and ask: “Vice-Chancellor, are you confident that our universities are undertaking these roles and functions effectively?”

I will say, “Pretty confident. There was a national review by the HEQC of all education programmes and accreditation was withdrawn from a number of universities that were judged to offer programmes that did not meet minimum standards. A major challenge, however, is that those students that are academically capable are not enrolling for formative teacher education programmes. Also bursaries have not been provided by the Department of Education, but fortunately that has now changed”.

“So surely nothing more can be expected of us and other universities Vice-Chancellor” Professor Sceptic will say. “Clearly, the problem lies elsewhere”. Indeed, the problem does largely lie elsewhere.

Still, in choosing the theme of 'the role of universities in improving the pipeline of students to universities' the NBI is perhaps seeking more of universities and will not be satisfied with Professor Sceptic's conclusion.

My own response to Professor Sceptic would be that we could need to look at our formative preparation of teachers and whether the balance between content knowledge, pedagogy and the wider education of teachers is appropriate. We could need to also take a critical look at the impact and outcomes of our in-service professional development of teachers.

I would also say that as part of community engagement we need to prioritize building long-term partnerships with local schools to help build their capacities and the capabilities of their teachers and students. I would also remind him that as Rhodes we have committed ourselves to a long-term partnership to support seven local historically black secondary schools to become effective schools, and to provide scholarships to all their students that qualify to come to Rhodes. I am happy to discuss our multi-faceted Uphuhliswano Lwezikolo Zaserhini (Developing Rhini/Grahamstown Schools Together) initiative further during discussion time.

Improving the pipeline of graduates to the world of work

I wish to now turn to the issue of 'improving the pipeline of graduates to the world of work'. This concern is obviously related to the dearth of high-level person-power that our economy and society is experiencing. Again, some preliminary clarifying comments are necessary.

The first is that the South African labour market is highly differentiated, which means that the person-power shortage that we experience is diverse. This requires effective responses from not only universities but also further education and training colleges and various other institutional education and training initiatives.

The second clarifying comment is that it has to be understood that the person-power shortage is of both a quantitative and qualitative nature. The *quantitative* shortage of person-power refers to the problem that there are more vacancies than there are the high quality graduates to fill these vacancies.

The *qualitative* shortage of person-power could refer to two kinds of problems. First, is that for various reasons our universities are producing graduates who unfortunately lack certain kinds of knowledge, expertise, competencies and skills that are required for effectively and efficiently undertaking specific professions. Equally important, is that we may be producing graduates that lack the values and attitudes that are

appropriate for a constitutional, non-racial and non-sexist democracy that proclaims its determination to uphold the dignity of all people.

To the extent that such graduates find employment in the private sector, and especially in the public sector, it is a case more of private benefits for these individuals than public benefits for society.

Another dimension of the qualitative shortage may be that there are currently university graduates employed in the private and public sectors who in varying ways and to differing degrees lack specific kinds of knowledge, expertise, skills and attitudes that are essential for them to effectively and efficiently undertake their professions and jobs.

In so far as the public sector is concerned, the existence of such people retards the building of a developmental state and also puts a brake on the capability of the state to promote economic and social development and discharge its constitutional and legal responsibilities.

A further clarifying comment is related to the fact that the dire shortage of high-level person-power is often expressed in terms of a 'skills' shortage. Very often the 'skills shortage' appears to be a reference to the dearth of people with adequate vocationally specific technical capabilities, such as are required by different kinds of artisans or professionals. While the lack of people with vocationally specific technical capabilities indeed acts as a brake on economic and social development it is, however, not self-evident that universities are either responsible for this state of affairs or have a role to play or a contribution to make in this regard.

Permit me to concretize this. If, as it is sometimes suggested, that the information and communication technology sector (ICT) is currently experiencing a shortage of 30 000 people, it is not axiomatic that this is either the fault of universities or that universities have a role to play in addressing this. It is possible that the shortage of the 30 000 people could be entirely satisfied by the effective training of people in National Qualification Framework (NQF) level 4 qualifications, which are *not* provided by universities.

Similarly, if the engineering sector claims a shortage of 10 000 people, it cannot be assumed that this requires universities to produce 10 000 more graduates. It could be that this problem could be resolved with no involvement of universities. We must, therefore, become much more specific about the levels and kinds of capabilities that are required.

It may well be that of the 30 000 people required for the ICT sector and the 10 000 needed by the engineering sector, x thousand and y thousand respectively require capabilities that can only be provided by NQF level 5 and above qualifications, such as certificates, diplomas, and bachelors,

honours, masters and doctoral degrees. In this case, universities clearly have an important role to play and contribution to make.

In speaking about the 'skills shortage', and in the context of a labour market that is highly differentiated and comprises of many different kinds of occupations and jobs, we need to therefore distinguish between person-power shortages of different kinds and at different levels of economic and social activity. Only then, can we properly consider the kinds of institutional responses and interventions that are required, whether these are from universities or other education and training institutions.

If some speak about the 'skills shortage' to denote the problem of a lack of people with vocationally specific technical capabilities, it is clear that others use the phrase 'skills shortage' as a short-hand to refer to not only technical skills but also the knowledge, expertise, competencies and attitudes that are needed by people to contribute to economic and social development. In the latter case, there is an understanding, not always prevalent among those who punt narrow technical and vocational skilling as a solution to our problems, that

- There is a difference between training and education, and it is not helpful to obfuscate or obliterate this difference
- The emphasis on adequate skills and technical proficiency is a *necessary* but not a *sufficient* condition to enhance economic and social development - more is required than simply the narrow technical skilling of people, and
- When it comes to university qualifications, 'skills' is not the only issue, and that the 'skills shortage' must be approached from the perspective of the overall and particular *configurations of knowledge, expertise, competencies, technical skills and attitudes* that are needed by our economy and society.

This leads to the final clarifying comment, which is related to the phrase the 'world of work'. I have no quarrel with the effective preparation of graduates for the 'world of work'. Our graduates must be able to cope with the considerable and ever-changing demands of the work place. They must be smart, adaptable, innovative, learn quickly, and have a work ethic if they are to effectively contribute to a developmental state and support our firms, enterprises and economy to be globally competitive and navigate the challenges of globalisation.

I will, however, quarrel vigorously if there is an instrumental approach to higher education which seeks to reduce its value to its efficacy for economic growth, and with calls that universities should prioritize professional, vocational and career-focused qualifications and programmes and emphasise technical 'skills' development. This completely misunderstands the value of universities and denudes them of their considerably wider social value and functions.

For one, higher education has intrinsic significance as an engagement between dedicated academics and students around humanity's intellectual, cultural and scientific inheritances (in the form of books, art, pictures, music, artefacts), and around our historical and contemporary understandings, views and beliefs regarding our natural and social worlds. Here, education is the pursuit of learning of nature and society, which is undertaken as part of what it means to be human (Oakeshott, cited in Fuller ed., 1989).

For another, as Martha Nussbaum argues, education is intimately connected to the idea of democratic citizenship and the "cultivation of humanity" (2006:5). "Three capacities, above all", Nussbaum argues "are essential to the cultivation of humanity" (ibid:5). "First is the capacity for critical examination of oneself and one's traditions'....Training this capacity requires developing the capacity to reason logically, to test what one reads or says for consistency of reasoning, correctness of fact, and accuracy of judgement" (ibid:5).

The "cultivation of humanity" also requires students to see themselves "as human beings bound to all other human beings by ties of recognition and concern" – which necessitates knowledge and understanding of different cultures and "of differences of gender, race, and sexuality" (ibid:6).

Third, it is, however, more than "factual knowledge" that is required. Also necessary is "the ability to think what it might be like to be in the shoes of a person different from oneself, to be an intelligent reader of that person's story, and to understand the emotions and wishes and desires that someone so placed might have" (Nussbaum, 2006:6-7).

In short, as Prof. O' Connel, Vice Chancellor of the University of Western Cape, has put it, universities are also 'tasked with the arduous formation of a critical, creative and compassionate citizenry. Nothing less will suffice' (2006). We would be extremely myopic, in the light of our colonial and apartheid past, if we for a moment imagine that the 'word of work' does not require graduates who are also deeply human and sensitive to issues of difference and diversity and social equity and justice.

With those clarifying comments, we can now turn to the issue of the *quantitative* shortage of university graduates needed for the economy and society. In this regard, there are three challenges:

- The first is to ensure that as a society we develop the ability to effectively identify the scope, size and nature of the high-level shortages that are being experienced by the public and private sectors.
- The second is to develop creative strategies to address the immediate needs that exist, while at the same time attending to medium- and long-term graduate person-power needs.

- The third is to forge the partnerships that are necessary and to mobilise the resources that are required for producing the high quality person-power needed by the public and private sectors.

Turning to the *qualitative* shortage, there are also three challenges:

- First, to the extent that our universities may be graduating students that lack certain kinds of knowledge, expertise and skills and also possess inappropriate values and attitudes, it is vital that we identify our key weaknesses and shortcomings and find ways of addressing these as a matter of urgency.
- Second, is to effectively identify the nature of the lack of capabilities that may be experienced by people already in employment, the key economic and social fields in which this is a pressing problem, and the numbers in the public and private sectors that require support; and
- Third, given that capabilities are not fixed but can be built and developed, we must devise creative strategies for effectively building the capabilities of graduates already in employment.

In the case of both the quantitative and qualitative shortage of high-level person-power it is important to have a long-term view. The quantitative and qualitative shortages of high-level person-power cannot be solved by quick fixes but only through high quality academic programmes and universities that produce high quality graduates, as well as by significant quality improvements in schooling.

It is not in question that our universities must contribute to economic and social development and produce high quality graduates. Nor is it disputed that in many cases there is need for extensive restructuring of qualifications and programmes to make curricula more congruent with the knowledge, expertise and skills needs of a changing economy. It is also necessary for us to acknowledge our weaknesses and shortcomings with respect to the quantity and quality of graduates that we produce and give attention to these.

More generally, seven issues in particular require attention.

1. Although postsecondary education is wider than a university education, in South Africa it is essentially constituted by public universities. As we strive for a 20% participation rate in coming years (currently 16%) and seek to incorporate an additional 100 000 students by 2016, we have to give attention to the institutional landscape and structure of postsecondary education and what *other* kinds of institutions apart from public universities need to constitute post-secondary education.
2. We have to settle the important issue of the differentiation and diversity of our public universities. This has been a controversial issue, yet unless we resolve the issue of differentiation and diversity, which

includes questions of institutional missions and academic programme offerings, the contributions of our public universities in relation to the diverse economic and social challenges that confront us will be less than optimal.

3. There has been a most welcome recognition on the part of the state that funding for capital infrastructure backlogs and new capital infrastructure to support institutional growth are vitally important if our public universities are to effectively contribute to our economic and social development needs. The R 2 billion provided for the period 2007/8 – 2009/10 and the additional R 3 billion to be provided for 2010/11 – 2011/12 will contribute immeasurably to better position our universities to discharge our educational responsibilities. It must be hoped that such funding will continue into the future. In addition, attention will also have to be given to the renewal of current research and other equipment and investment in new equipment if we are to indeed produce high quality graduates.
4. Financial aid for needy students continues to be a pressing challenge. The additional funds that will be devoted to the National Student Financial Aid Scheme are to be welcomed, but significantly greater investments will be needed if we are to ensure that the needs of all eligible students are to be effectively met. Some tweaking of the eligibility criteria will also be required.
5. Although adequate public funding is a necessary condition for better equipping our universities to address the shortage of high-level person-power, it is not a sufficient condition. The extent to which academics are effectively equipped to ensure high quality learning and teaching, to innovate new curricula and new teaching and learning strategies in relation to the changing requirements of the economy and society, the diversity of students that now enter our universities, and the under-preparedness of students relative to the rigours of a higher education, have to also be honestly confronted. The shortcomings of our universities with respect to the quantity and quality of graduates that we produce may not be rooted entirely in inadequate public funding but also in the extent to which we have been willing to address curriculum and learning and teaching issues.
6. It is well-known that academic salaries lag considerably behind those of the private and public sectors. [Take the example of Prof. Sceptic's colleague, who will retire as a professor after 35 years of service on a total package of R450 000. Graduates in their late 20's/early 30's with a Masters or Doctoral degree and little experience begin as director's in the public service with a package of R550 000!].

Unless there are increases in the public subsidies to universities to enable the adequate remuneration of academics, the ability of

universities to respond to development challenges will be severely handicapped. The Education Ministry is well-aware of this problem and it must be hoped that the National Treasury can be persuaded to give urgent attention to this matter.

7. Finally, we must also begin to address with much greater urgency and purpose the challenge of producing a new generation of academics. On the one hand we need to ensure that the current ageing academics, who also tend to be the most productive researchers, are effectively replaced. [Professor Sceptic is 61 and personifies South African professors, who are white, male and ageing. They are the most productive scientists and researchers. 50% of professors will retire during the next 10 years]. On the other hand, the production of a new generation of academics must simultaneously address the challenge of producing many more black and women scholars so that the equity profile of the academic workforce is progressively transformed. We must also ensure that the new generation is of high quality and have the capabilities to teach and research effectively.

These seven issues must receive attention if universities are to effectively contribute to producing the quantity and quality of graduates that are necessary for economic and social development.

Universities can, of course, also play a role in addressing the qualitative shortage of person-power, in particular the lack of capabilities of those who are in employment or of unemployed graduates. This requires on the part of our universities:

- An openness to consider the specific needs of local, regional, provincial and national institutions and actors
- A commitment to forge partnerships to address these needs, and
- A willingness, in relation to institutional capabilities, to carefully conceptualize and design high quality flexible, part-time and short duration programmes that are tailored to address specific knowledge, expertise and skills needs.

To take an example, last week at Rhodes we launched the Confucius Institute in partnership with Jinan University and with the support of the Chinese Hanban. Next year, we will begin offering Mandarin because it is vital that we equip our graduates to be able to converse in the language of the world's emerging new economic powerhouse. However, we also plan to use the Confucius Institute to offer short courses in Chinese history and culture to the business and state sectors as part of their professional development so that their staff are equipped for dealings with Chinese businesses and state officials.

As is well-known, the institutional mechanism that has been developed to address the 'skills shortage' is JIPSA. Higher Education South Africa is part

of JIPSA and all four Eastern Cape universities are members of the Eastern Cape provincial JIPSA. It is vital that JIPSA identifies and prioritizes the quantitative and qualitative person-power needs that exist. It is also important that JIPSA effectively assembles, holds together and facilitates meaningful and enduring partnerships among a wide range of key actors – business, national and provincial state departments, trade unions and higher education institutions – in common endeavour around addressing person-power shortages. Finally, it must also facilitate the development of creative practical and concrete initiatives and interventions and ensure that the necessary resources are allocated to implement these initiatives and interventions.

Conclusion

To conclude, I indicated that I would not be providing magical solutions on the roles that universities can play in improving the pipeline of students to universities and graduates for our economy and society – there are none. The appropriate interventions need to be innovated by universities, government and business working in concert.

At the same time, nothing I have said suggests that universities have no role to play in addressing these issues. On the contrary, universities have a vital role to play. In the short-term, interventions are possible and universities should certainly contribute in accordance with their institutional capacities and capabilities.

I have three pleas. The first is for a greater appreciation of what can and cannot be expected of universities with respect to improving the pipeline of students to universities.

The second plea is for us to understand that 'skills' cannot be reduced to technical and vocationally specific skills alone but must encompass the configuration of knowledge, expertise, competencies, technical skills and attitudes.

The final plea is for there to be an appreciation that universities cannot be expected to serve the 'world of work' alone. Instead, universities and higher education must play a wider social function that is also related to democratic and critical citizenship.

Universities must play multiple and different roles, especially in a society such as ours which is in transition and must overcome underdevelopment, unequal development and the unacceptable economic and social legacies bequeathed to us by colonialism and apartheid.

In as much as we must be responsive, our responsiveness must be simultaneously economic, social and intellectual. We must produce the

necessary quantity of graduates but equally important these graduates must be of the requisite quality.

The requisite quality means graduates that are not only *technically* capable and proficient but also ethical and compassionate in character, and with an understanding of their constitutional obligations and citizenship responsibilities.

This includes the courage, as critical citizens, to boldly 'speak truth to power', when those in power need to be: reminded of their constitutional obligations and social responsibilities; criticized for their grave lapses in public leadership and morality; cautioned against obliterating the important distinctions between party, government and state, and warned against the use of the state for private accumulation and party patronage.

This, ultimately, is what is entailed by a university response to improving the pipeline to the world of work that is congruent with the *meaning* of higher education.

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