Educational Research (ISSN: 2141-5161) Vol. 3(12) pp. 912-920, December 2012
Available online@ http://www.interesjournals.org/ER

Review

The Humboldtian conception of research and learning – towards competitiveness in South African Higher Education

A Nicolaides

Vaal University of Technology
HOD-Hospitality, Tourism and PR Management, Master HR Practitioner (SABPP) International Hotel and Resort Management (AHLA), |Private Bag X021, Vanderbijlpark, South Africa, 1900
E-mail: angelo@vut.ac.za

Abstract

It is generally acknowledged that the South African system of education is plagued by a myriad of problems. The debate on higher education reform in South Africa is currently dominated by a multiplicity of competing visions about what universities are or should be, so that the country can move forward and be competitive in the global economy. The country has three types of universities, namely, Traditional Universities where the focus is philosophical, Comprehensive Universities (traditional Universities that merged with Technikons) where the focus is professional and managerial, and Universities of Technology (former Technikons afforded stand-alone status) where the focus is vocational and technical. What is the purpose of education in the 21st Century? In the 1830s, there emerged a unique social contract between Prussian academia and the state of Prussia. The Humboldtian University emerged as a humanistic experiment and this was promoted and inspired by numerous idealistic scholars such as Wilhelm von Humboldt, Friedrich Schleiermacher and Johann Fichte. The theory of the *Kulturstaat* developed which postulated the notion that society exists to promote the evolution of *Kultur*. Berlin University, founded in 1810 was the first expression of this humanistic university initiative and it later served as a model for other German universities to emulate. In this model, the state's role was twofold, namely, to serve and support universities as reservoirs of culture and to guarantee academic freedom which was crucial for the preservation and further development of culture. A plethora of Humboldt's ideals on higher education maintain much of their attraction today. This article seeks to interrogate these ideas and to suggest how the Humboldtian conception of research and learning can be useful for South Africa today at a time when the country needs to be making progress towards greater competitiveness in the knowledge-based economy.

Keywords: Research, learning, South Africa, Humboldt.

INTRODUCTION

The Classical Greek philosopher, Plato, regarded the purpose of education as being vocational and technical (functional), professional and managerial (ideological) as well as philosophical. In this view, education must be committed to achieving the economic goals of a country through the development of skills required to serve industrial needs. Professionals and managers should be produced to effectively and efficiently manage administrative systems of government. Equally important was the development of the individuals mind (Lowe, undated). In Higher Education, these ideas have resulted in four models of universities, namely, the Athens model, the Berlin model, the New York model and the Calcutta model. In the Athens model, knowledge is pursued for knowledge's sake. The Berlin model seeks to integrate research and teaching in an environment in which there is total academic freedom. The New York model is driven by market forces and entrepreneurship while the Calcutta model seeks to make universities the solver of societal problems.

African universities are seeking ways in which to become truly African and an emphasis is placed on changing educational syllabi and curricula so that the whole way that teaching and learning are organized and

which criteria determine what research should constitute become important considerations (Moulder 1995:7). This is critically important as Africa struggles to become globally competitive at a time when she enjoys a very minor share of the world's economy and this is exacerbated by corruption, a lack of vital resources and a lowering of standards. What is also problematic is the lack of a philosophical or ideological driving force in the transformation of education process. Consequently, it is the 'bottom-line' which drives the Higher Education sector. Academic freedom which is inherent in teaching, and academic self-governance have to all intents and purposes vanished. These aspects were very important in the Humboldtian (Berlin-type) of university. In the current scenario, each of the three South African university types are geared to serving society and solving community problems within the idea of social responsibility. Research is transcendent in both the traditional and comprehensive type universities, but it is only just 'taking-off' in Universities of Technology. Universities thus need to be relevant to the community and to aid in this regard, multi, inter and trans-disciplinarily in research are non-negotiable. The relevance of Higher Education must be assessed in terms of the fit between what society and world of work expect from institutions and what actually happens in the institutions involved (Du Pre 2004: 35).

Within Higher Education, the epistemology of what is worth knowing and who produces such knowledge is the responsibility of many role players. A primary role is to produce new technologies and discourses and new forms of professional life moulded by new frames of understanding (Barnett 2000:417) so that totally new ideas come into existence (Biesta 2000:321). Secondly, all new knowledge should be carefully scrutinized (Barnett 2000, 418) and, thirdly, *being* should be the key epistemological concept for a university, where individuals can act purposively and challenge everything (Barnett 2000, 419) so that knowledge becomes critical action. Education should involve a highly critical and reflective understanding of the world as a global village in which we all have huge responsibilities. Universities should thus be serving society so that it becomes truly sustainable and just. Unfortunately, precisely the South African experience suggests that there is room for skepticism about the possibility of actually achieving such goals.

The National Plan for higher education outlines the vision for the transformation of the higher education system in South Africa and this outlined in *Education White Paper 3 - A Programme for the Transformation of the Higher Education System* (DoE 1997 White Paper:1.1). An implementation framework is provided which identifies a wide range of strategic interventions which will be necessary to transformation higher education. The fundamental challenge facing the South African higher education system is described as the need: "to redress past inequalities and to transform the higher education system to serve a new social order, to meet pressing national needs, and to respond to new realities and opportunities" (DoE 1997 White Paper: 1.1). While research and teaching are described as comparable to international best practice and standards, much work still needs to be carried out especially in the overall quantity and quality of graduate and research outputs. Another huge problem is high drop-out rates.

In the state-supported universities in South Africa, the percentage of early departures without a degree is alarmingly high, especially in the first year. It is estimated that about 40 percent of registered students drop out of studies during their firs year of study. It is generally agreed that this is due to inadequate preparation at the primary and secondary school levels where there is at the most, only a partial achievement of competencies in curricula. There is also a lack of emotional maturity borne out of a racial past and thus inadequate concentration on studies amongst students. The assumption that National Diploma (Diploma) and Degree programmes can and will actually be completed in three years, which is also the basis for financial student support is equally unrealistic and highly optimistic. For a number of years, the actual time to completion for a National Diploma has been closer to four years or even longer, rather than the stated three years. In fact about only 15 percent of students obtain their qualifications in the allocated minimum timeframe. While there are bridging programmes in place to support weak students, this is not nearly enough to allow South Africa to emerge as a serious higher education provider of note.

The White Paper describes the role of higher education in a knowledge-driven world as three-fold:

Firstly, "Human resource development: the mobilisation of human talent and potential through lifelong learning to contribute to the social, economic, cultural and intellectual life of a rapidly changing society.

Secondly, "High-level skills training: the training and provision of person-power to strengthen this country's enterprises, services and infrastructure. This requires the development of professionals and knowledge workers with globally equivalent skills, but who are socially responsible and conscious of their role in contributing to the national development effort and social transformation".

Thirdly, "Production, acquisition and application of new knowledge: national growth and competitiveness is dependent on continuous technological improvement and innovation, driven by a well-organised, vibrant research and development system which integrates the research and training capacity of higher education with the needs of industry and of social reconstruction." (White Paper:1.12)

A major gap exists thus between the dream of achieving desired transformational social change and the realities of university life where for the most part, theory

and praxis fail to meet and where there is very little reflection and construction, deconstruction and redefining as a result of student-academics engagement. What can we learn from the Berlin-type of university?

Von Humboldt

Wilhelm von Humboldt (1767-1835) was one of the important reformers who helped to define the destiny of the Prussian State after Napoleonic control. He laid the foundations of a new education system in Prussia despite serving only sixteen months at the head of the Prussian educational administration. His ideas and philosophy of education rejuvenated education on Germany and his ideas continue to impact upon and globally influence higher education in particular, up to the present day. He stressed that education is about *Bildung* – the concept of bonding individuals, culture and society in a harmonious interrelationship. Universities as such, are not merely responsible for training professionals, but also for cultivating the individual and developing character and moral fibre.

Von Humboldt conceptualized the modern university and institutionalized research and scholarship and was one of the leading creators of modernity. He essentially transformed the way we perceive and think of universities. 'Humboldt' is thus a symbol for the autonomy and dominance of the professoriate in university affairs as we know them today. As a Prussian Minister of Culture and a leading philosopher of his time, he played the foremost role in the establishment of Berlin University (von Bruch 1997; Boehm 1983). To Humboldt, universities were important symbols of a nation's intellectual greatness and had to support the state. He never advocated a system of national education that was predominantly Prussian but rather saw himself as a spokesman of all German people and his many works reflect that he always had in the mind the interests of all of humanity.

When speaking of a Humboldtian- type university today, reference is made to the linkages between teaching and research as well as the role of a university as a research institution. For Humboldt there is a clear unity of teaching and research (*Einheit von Lehre und Forschung*) and all learning is a shared endeavor, in which the academics are not there for the students, but they and the students are there for science, scholarship and the promotion of culture (Humboldt, 1809/1982: 274). When academics have freedom in research and teach, a university advances pure science that is not in any way solely to serve vested interests. In the German conception, Science is inclusive of the humanity which makes provision for the important moral education of students *(Sittliche Menschenhildung durch Wissenschaft)* and philosophy as such, binds the disciplines and faculties. Intellectual ideas cannot be valued enough since they are the very foundation upon which the strength of a state *"can eternally rest"* (Lenz 1910-1919: 530).

University education should in Humboldt's opinion, continue and complete the general education imparted in the school years. University education should differ from teaching in primary and secondary schools and assume a special unique nature. Teachers are important in school education but their role is not essential in university training. It is rather intriguing that in the course of the nineteenth century the term 'Humboldtian university' was not used to typify the university system that was employed in Germany. The establishment of the University of Berlin was not characterize a break with tradition and the development of contemporary universities was as an alternative, associated with the success of rationalism and organizational reforms as exemplified the universities Gottingen and Halle throughout the period of the Enlightenment (Paletschek, 2000b). The modern research university' was founded in Berlin according to Humboldt's ideals towards the turn of the 20th century. There were however also other more prominent intellectuals involved including inter alia, Fichte, Kant and Schleiermacher (Von Bruch, 2001). Humboldt's 'classical' representation of a research university comprised four main components, namely, freedom of teaching and learning (*Lehr- und Lernfreiheit*), a unity of science and scholarship (*Einheit der Wissenschaft*), freedom of teaching and learning (*Lehr- und Lernfreiheit*) and fourthly a unity between science and scholarship (*Einheit der Wissenschaft*). Thus equally important to institutional and organizational reforms at universities were spiritual replenishment, innovation and philosophy and these were grouped together in what became known as *Wissenschaftsideologie*.

The freedom of the sciences and the autonomy of the academic staff are the premises upon which Humboldt's university model is based. Humboldt believed in the freedom of the individual to the extent that students had a right to choose their instructors and professors should be able to select what and they taught as well as the methodology they would use. Such a notion implied by its nature, a distinct move away from a set curriculum. Humboldt was of the opinion that there was no basic distinction in between the natural sciences and the humanities. This was due to the belief that the notion of *Wissenschaft* applied equally to both. To Humboldt then, basic science (*Wissenschaft*) was in itself practical in humanistic teaching. This meant that Gymnasium teachers who had university training were best suited to prepare secondary school students for university education (Ringer, 1969). Humboldt believed that science and scholarship as methods of inquiry were: 'not a finished thing to be found, but something unfinished and perpetually sought after'. Thus there should be no repetition of what was to be learned from textbooks, but there should rather be: 'an approach to learning, an

attitude of mind, a skill and a capacity to think rather than specialized knowledge' (Humboldt, 1809/1990: 274).

German universities were thus symbolic of Prussia's greatness. These institutions of training for the academic professions were required to develop the both the humanities and sciences whilst serving as 'general education' *Allgemeinbildung* promoters. The states role was to support universities in a symbiotic relationship, and make certain that academic freedom was upheld as this is ultimately what allowed culture to be developed and preserved in what became a *Kultuurstaat* (Schelsky,1963:131). Consequently, freedom of teaching and research became special features of German universities. At the beginning of the 20th century, the foundations of the modern German university began to be identified with the humanistic university idea and more especially with the University of Berlin. The purpose of the universities was to extend knowledge and ideas were considered to be the dynamic forces in the history of a nation which ultimately led to its national development. Such views, promoted by neo-idealist thinking, made possible the idea of the new humanistic university which emerged in the form of Berlin University. In such Berlin-type models of a university, the integration of research and teaching were championed within an environment of total academic freedom.

Humboldt's educational ideal is wholly influenced by social considerations. He never believed that the 'human race could culminate in the attainment of a general perfection conceived in abstract terms'. As early as 1789, he wrote that 'the education of the individual requires his incorporation into society and involves his links with society at large' (*GS*, xiv, p. 155).

Also in this university typology, the professoriate was to teach and research since intellectual aspects could not be too highly valued as they were regarded as the very basis of all that on which the strength of the state should rest (Lenz, 1919: 350). This Humboldtian ideal has supplied the stratagem to rationalize contemporary university conceptions. Dietrich Benner states that 'the study of Humboldt's work ... will help to clarify the central problems and questions of recent educational theory as matters concerning all of us, and also help to resolve issues which require further theoretical and practical analysis' (Benner, 1990: 210).

Pre and post Second World War innovations

By carefully analyzing and interpreting the writings of Humboldt, Fichte and Schleiermacher shaped the contemporary image of the idyllic university which was thus Humboldtian in orientation. Schleiermacher in particular viewed universities as the shapers of a entirely new intellectual life process which would give rise to *Wissenschaft* in that it would become second nature to students to seek learning as a primary objective for their lives (Varrentrap, 1889: 447-448). Schelling stated that *Wissenschaft*: "is knowledge of the absolute unityexisting between the Ideal and the Real. *Wissenschaft* is the philosophical insight that there is unity between he Real and the Ideal. *Wissenschaft* is innate in all men but it is a growing thing, evolving and dynamic and so central to this is the concept of *Bildung*, also drawn from idealist philosophy-the process of becoming in an educative sense. Under this system, discovery-research –was a moral act as much as anything" (Lenz, 1919: 470-472). So scholars were expected to be natural leaders in society and should thus be of the highest moral standing.

From 1910 to1930 the institution and strengthening of the new humanistic university notion as a permanent ideal became relatively entrenched until its overthrowing by the Nazis up to 1945. There was however a return to the Humboldtian conception of a university after the destruction of Nazi Germany. There should also be a continuous skeptical evaluation of knowledge and its validity in what was termed *Kritik.* This notion was also inherent in Kantian thinking in the late 1780s. There should thus be a careful and critical scrutiny of all evidence leading to scholarly works. Consequently, changes appeared in the physical resources of universities as well, so that libraries included huge collections of manuscripts and highly sought after journals. Reviews of writing were equally sought after and this promoted methodological thoroughness and set standards to be emulated and surpassed as academic works were scrutinized by peers.

Humboldt's ideas on what a university is, are found in his essay *Uber die innere und eiuflere Organization der hiiheren wissenschafilichen Anstalten in Berlin* ('On the internal and external organization of higher academic institutions in Berlin'). In this work he emphasizes the importance of research and refers to it as an ongoing and incomplete project and universities are regarded as places in which research should be paramount. There should be a critical method which moulds discovery and all scholarly creativity and education should provide originality of thought not mere sophistication. Thus developed the ideology of original research, which would enhance human culture and promote the moral development of scholars or *Bildung*.

The 1920s and 1930s

In the post First World War period, there were calls for university reforms to be introduced in Germany primarily because the education system was considered to be part of the reason for Germany's defeat (Becker, 1919: viii). A myriad of complaints emerged concerning higher education in Germany. For one, the female students accounted for a mere 20 per cent of all students. Furthermore, education critics complained that there were too many students who were in any event over-

stressed by the volumes of specialist knowledge they had to absorb and interrogate as well as by their lack of academic freedom and inability to study what they wished to study.

Professors were spending too much time researching and not enough time was devoted to lecturing. Courses on offer at universities were relatively unstructured and too theoretical in structure. As student numbers increased so did social changes. The majority of students in the 1930s emanated from the lower and middle classes. It was a great concern that there were too many academics and discussions speculated on the possible retrenchment of surplus staff at universities (Titze, 1995). In short the future looked rather bleak and so the discussion about the role of universities intensified with two distinct positions emerging.

Diverse viewpoints

There were those who sought to maintain the status quo while there where others who promoted the idea of radical change. Amongst those seeking to maintain the status quo in which universities had diverse roles and tasks were Carl Heinrich Becker and Eduard Spranger, who promoted the notion that German universities should be either beyond or above secular or past constraints. Their support of the new humanistic university idea served as a justification of the status quo in university status. They further believed that fresh interrogation of and understanding of the Humboldtian ideal would offer a solution of the problems plaguing German universities'.

On the other hand there were stern critics of the university system and its research and teaching approaches such as Max Scheler who maintained that the wide and varied functions of the universities including research, professional training and general education, should not reside within one type of institution as this was an archaic modality which originated in the Middle Ages (Scheler 1926: 493, 496-502). He posited the view the new humanistic university idea had simply supplemented general education *(Menschenbildung)* to the responsibilities of universities at a time when neither modern research nor specialized academic education, were fully acknowledged. He subsequently promoted the notion that there should be a functional separation between typologies of universities and that they should be urgently restructured and transformed into institutions for professional academic teaching.

Carl Heinrich Becker stated: *"One can only speak of the nature of the German university with reverential awe ... When we speak about the university we have a clear and distinct ideal image in our souls, a sort of Holy Grail of pure scholarship. Its knights serve a sacred cause"* (Becker 1925: 1) He believed that German universities should not be utilitarian in nature and drive professional training but rather seek a 'selfless search without goals' (*selbstloses und zweckloses Suchen*) (Becker 1925: 2). Becker argued that the problems of specialization, self-centeredness and greed were embedded in positivism, rationalist thinking, and the epoch of natural sciences and technology, which had displaced idealism in Germany ever since the late1830s. He desired to see better quality in university teaching and sought the reinstatement of the new humanistic university idea and a holistic approach to education in which students and lecturers had greater rights that would enable new ideas to be put into practice promptly. Science was out of touch with life and the 'youth of all ages' would soon insist on a comprehensive concept of scientific thinking *(erweiterter Wissenschajtsbegq)* which took cognizance of the craving for cohesion and which simultaneously included non-rationalist impulses (Becker 1925: 22, 25). Sociology was regarded by him as one discipline which could encourage intellectual synthesis (Muller 1991: 335.-95).

Eduard Spranger was the first to 'recognize the true value of Humboldt's contribution to educational development at the transition from the nineteenth to twentieth century' (Benner, 1990: 5). Spranger maintained that a theoretical academic education endowed students with enhanced preparation for a career than was the case with professional training (Spranger 1930: 13). He also reasoned that the crisis in higher education could partly be attributed to the democratization of education and the 'inevitable reduction in quality associated with it' (Spranger 1930: 36)'. He suggested that the relationship between scientific research and professional training and education, was essential for success to result in educational endeavours at universities.

The choice of Humboldtian ideals legitimized reforms and the spirit of the time *(Zeitgeist)* was strong among students, and it also characterized nationalistic-ethnic (*volkisch*) tendencies. The search was on for a holistic world view and this was undoubtedly a reaction to the rapid social change and also a response to the huge costs of modernization.

The advent of World War Two and beyond

The National Socialists who assumed power when Hitler became the Chancellor of Germany in 1933 had no idea as to what university reform should encompass. In all their utterances on university matters they remained nebulous and whatever guidelines they suggested were broad in nature. In large measure, they simply accepted pre-1933 conceptions of university education. After 1945 policies were formulated this would serve to draw distinct lines between universities and National Socialist ideologies and policies. From 1945 onwards, there was a denazification of the universities and most professors were again lecturing and carrying out research. What emanated was the return to the idealization of the neo-

humanistic university notion which endured well into the 1970s. In both the DDR (East Germany) and the FDR (West Germany) university policies were geared to re-instate the Humboldt tradition (Connelly, 1997). The 'everlasting' *(uberzeitlich)* university ideal of Humboldt was once again sought and it was taken very seriously in West Germany. This Berlin-type model of university education continues to be the most popular today (Jarausch, 1999). Reform that Humboldt originated, led to the establishment of the Gymnasium certificate (*Abitur*) which became and remains the formal entrance requirement for university study.

The new humanism and classics were tacitly regarded as a form of defence against National Socialism. The *Blaues Guiachten* (Blue Audit) of 1948 called for a renewal of the educational functions of the universities (Gutachten 1948). An effort was put into introducing a *studium generale* so as to lead students into humanistic education. It was believed that this would prevent the brutality of National Socialism re-emerging. This was however withdrawn in 1951, after students did not accept it.

In the 1960s, Helmut Schelsky's book *Einsamkeit und Freiheit* (Loneliness and Freedom) played a fundamental role in promoting the Humboldtian ideal. In 1963 Schelsky expressed the foundation of Berlin University 1810 as the 'present past' (Schelsky 1963: 48). He stated that the ideas of Wilhelm von Humboldt were critical for contemporary university reform with special emphasis on research initiatives and the concept of scientific education.

In the most elementary school (*Elementarunterricht*), students were taught learn basic skills. In high school (*Hochschule*), the curriculum was geared to teach students how to learn and make them intellectually independent to an extent. Once at university, students would be free members of the university community and as such devoted to learning (Sorkin 1983: 63). University lecturers are thus is no longer teaching and the student no longer someone merely engaged in the learning process but someone who undertakes his own research, while the professor directs his research and supports him in it. (Humboldt 1903–36, vol. xiii: 261, quoted in Hohendorf 1993/2000: 8).

Research-intensive universities

Humboldt, as stated earlier, fashioned the notion of universities that closely intertwined research and education in one place. This gave students direct access to the leading researchers and thinkers of their time. In return, scientists benefitted from the critical inquiries posited by their students. The universities which developed, such as Berlin University, attracted scientists, scholars and students from across the world and they conducted ground-breaking and cutting-edge research.

This European variety of research-intensive universities soon became the role model for universities in the USA such as, *inter-alia*, Harvard and Yale. There is a continuity of this model from the nineteenth and twentieth centuries through to the present time. The two examples of institutions provided above are today world-leading institutions for research and education. Beyond the realm of academia the globe has changed drastically since von Humboldt's time. Advanced nations such as Germany, Britain, the USA and France have been moving away from the manufacturing-based economies that sustained them throughout the twentieth century, towards knowledge-based economies that are highly dependent on scientific research and a well trained workforce. Consequently, such nations now seek intellectual property, knowledge and highly skilled employees rather than raw materials and industrial capability. This implies that transformative learning, moral self-cultivation and *Bildung* are necessary. Many regions now confront the problem of how to equip students with knowledge and skills for future employment. Students need to be able to think, categorise, investigate, emphasise, create, differentiate, and all through research. This need is apparent throughout the world. Pragmatism must be balanced with idealism so that education takes place through participation, reflection and research.

Humboldt stated: “Measures, accustom men to look for instruction, guidance, and assistance from without, rather than to rely upon their own expedients, and thereby directly counteract the development of men‘s own faculties. The best system of instruction, therefore, unquestionably consists in proposing, as it were, all possible solutions of the problem in question, so that the citizen may select, according to his own judgement, the course which seems to him the most appropriate; or, still better, so as to enable him to discover the solution for himself, from a careful consideration of all the objections. In the case of adult citizens, the State can only adopt this negative system of instruction by extending freedom, which allows all obstacles to arise, while it develops the skill, and multiplies the opportunities necessary to meet them”. (Humboldt 1791-1792/1993, chapter 3: 19-20.) Humboldt thus supported the notion of having a progressive increase in freedom and responsibility in education. The changing world has however placed universities under new and great pressures. They must produce an increasing number of graduates and remain the main generators of knowledge. These ‘products’ are the main resources needed by advancing knowledge-based economies. The German Philosopher Johann Gottfried von Herder (1744 – 1803) had similar views to Humboldt: "It is the apparent plan of nature that as one human being, so also one generation, and also one nationality learn, learn incessantly, from and with the others, until all have comprehended the difficult lesson: No nationality has been solely designated by God as the

chosen people of the earth; above all we must seek the truth and cultivate the garden of the common good. Hence no nationality of Europe may separate itself sharply, and foolishly say, "With us alone, with us dwells *all* wisdom." (Herder, quoted in Forster 2002).

If a nation wishes to be successful and thus competitive, it needs to nurture research, but the so-called research universities should resist becoming more and more specialized, and rather seek to integrate undergraduate teaching and research in a Humboldtian manner. In so doing they will be creating a genuine community of scholars who will be needed to take the lead in technology and science which is paramount for any nation's success. Both faculty and under as well as pot-graduate students must be inspired to develop creative ideas in an ethos of knowledge seeking and *building*.

CONCLUSION

In the face of a rapidly changing global economy and at a time when the job markets of the world have become internationalized, students are called upon to simultaneously adapt to a number of challenges when joining the ranks of the working. Likewise, universities find themselves confronted with the need to not only educate citizens, but also to meet the huge demands of a burgeoning job market. In this scenario, research universities undoubtedly play a critical role in research and education because they not only educate undergraduate students to develop their opinions and decisions on existing evidence, but also develop their enthusiasm for a career in research. If research is to be enhanced, universities must first and foremost, be given real autonomy to become innovative and more responsive to rapid change (Brodin, 2007). They also need to develop meaningful and structured partnerships with the business community and other potential education partners and collaborators. South Africa needs universities to build on their own strengths and differentiate their activities on the basis of their unique strengths. University curricula should reflect the needs of a global society and context should inform the curricula that are followed. If we are to promote technology, we should try to find ways to make technological fields more interesting to all students, especially women. The notion of lifelong learning should be promoted more as it is a great challenge facing South Africans. Universities are old institutions that have survived because they have adapted to the needs of society and have always educated people to train them for their professions and life and to be useful to society.

How do we train students for a workforce and give them requisite skills, and teach them to be critically minded, ethical and global citizens? The perceived utility of education on the part of students needs to be urgently addressed in South Africa. Technology must be integrated into education but personal communication and interaction should not be sacrificed. Certain curricula elements should be put into technologically supported offerings but whatever programmes are adopted, a spirit of research has to be further cultivated. Students must be taught critical skills as these will enhance job opportunities in the work force. Ethics must be taught in our service society so that people can act appropriately in whatever discipline. General education such as liberal arts studies should be part of every curriculum.

Michael Gibbons explains that the skills that all graduates will require in the 21st century are computer literacy, knowledge reconfiguration skills, information management, problem-solving in the context of application, team building, networking, negotiation/mediation competencies and social sensitivity (Gibbons, 1998).

The importance of research is huge since it is perhaps the most powerful means that South Africa has to deepen democracy. Research also stimulates the values of inquiry, critical thinking, creativity and open-mindedness, which are basic to developing a strong, democratic ethos. Research develops communities of scholars, who can grow a spirit of collegiality and networks with academics across the globe. It is only via research that an innovation culture can grow. This is critical as new ideas, approaches and applications increase the adaptive and responsive capacity of South Africa whilst enhancing industrial competitiveness and the nation's ability to solve dire social challenges. In a nutshell, enhanced research will

add to the global growth of knowledge and will position South Africa as a country possessing a serious and active programme of knowledge generation.

While research should remain the pivotal task of the entire university system, it should not be the focus of every institution. A system in which research is vital will serve to muster the substantial pool of knowledge and energy within universities and this will enable South Africa to obtain greater external investment. In the University of Today, irrespective of which model of institution, teaching must involve open-ended enquiry that is characteristic of research. Professorial research will also be broadened and enriched by ideas that emanate from teaching. It is essential that South African universities position themselves strategically, and consider the particularities of their environment as they capitalize on their relative strengths. Fundamental research at universities should to an extent reveal applications, and it should then consider whether the invention should be protected with patents, so as to develop and commercialize it.

First, one has to define what is meant by 'applied research'—it might better be thought of as 'use-inspired' because we still care about understanding why something occurs, in addition to potential uses for it.

We've also found that this kind of enquiry and engagement with 'real-world uses' actually brings an entirely new set of interesting research problems that we would miss if we tried to remain purely in the world of so-called 'basic research'. Universities should focus their endeavours on solving problems that matter to people-i.e. they should effect applied research, but not neglect basic research in the process. All research is worthwhile and important and so a balance should be maintained. Given the myriad of problems facing society, the pressure is on universities to help society become more economically competitive. This implies then, that universities will need to continue to work on applied research. While every institution has the right to protect its intellectual property, the underlying mission of universities is to educate people. Universities must not focus too much on the commercialization of patents and other intellectual property as this may inhibit open collaborative research, which is a very good way for students to learn.

Industry must be an important player in the South African research landscape, but universities should never compromise their academic freedom. By seeking funding from external stakeholders in the quadruple helix model, universities are contracted to do a certain job but this can limit academic freedom because they have to adhere to the goals of a company which may be funding the work, and this ultimately has economic rather than purely academic interests. Caution is thus required. The accountability of universities has and always will be a part of the 'social contract' between universities and the broader society in which they operate. The concept of academic freedom as postulated by Humboldt is thus not outmoded (Westbury et al, 2000).

Public funding to support the infrastructure of a university is non-negotiable as is the funding of individual researchers and/or projects but these objectives need to be balanced. Without funding, universities will not be competitive and then neither will the country be competitive. In a global environment in which economies are becoming more knowledge-based, it is critical that people are more educated to be competitive. This in itself is a ample motivation for the government to fund universities. By educating the next generation we secure our future. Within this education, *Bildung* must be fostered through broadly accessible liberal arts education. Daniel Fallon (2001) argues that in the United States, the world leader in economic terms, American reformers understood from the outset that a modern higher education system would and should combine broadly accessible liberal arts education with graduate training concentrated in research-oriented institutions. While funding is vital, it would be nothing less than a reputational calamity for a university to accept funding from private benefactors who have an agenda of some sort to promote, be it political or other. If this occurs, private money will simply stoke the fires of intellectual property wars that will arise. Universities have been and should continue to remain safe havens for vigorous debate and argument, even though there may be cloistered rivalry.

The Humboldtian ideal allowed a multiplicity of university responsibilities as it reinforced the self-image of the university as a research institution. This German model still has great value for us today but the first issue we need to address should be *Bildung* not numbers and graduates.

REFERENCES

Barnett R (2000). University knowledge in an age of super complexity. Higher Education 40:409-422.

Becker CH (1919). Gedanken zur Hochschulrefirm, Quelle & Meyer, Leipzig.

Benner D (1990). Wilhelm Von Humboldts Bildungstheorie: Eine Problemgeschichtliche Studie Zum Begründungszusammenhang Neuzeitlicher Bildungsreform. Weinheim; Munich.

Biesta G (2004). The community of those who have nothing in common: education and the language of responsibility. Interchange, 35 (2): 307-324.

Boehm L (1983). 'Wilhelm von Humboldt (1767-1835) and the University: Idea and Implementation', CITE-formationen, 62: 89-105.

Brodin E (2007). Critical Thinking in Scholarship: Meanings, Conditions and Development. Lund University, Department of Education, Lund, 2007.

Connelly J (1997). 'Humboldt Coopted: East German Universities, 1945-1989', in Michell G. Ash (ed.), German Universities Past and Future. Crisis or Renewal? Berghahn, Providence, 55-76.

Department of Education (DoE) (1997). Education White Paper 3: A Programme for the Transformation of Higher Education. General Notice 1196 of 1997. Pretoria

Du Pre R (2004).The philosophy of a University of Technology in South Africa: An Introduction, Sediba sa Thuto (1):7-9.

Gibbons M (1998). Higher Education Relevance in the 21st Century. Washington: The World Bank.

Herder JG (2002). Philosophical Writings, ed. Forster, Michael N., Port Chester, Cambridge University Press, NY.

Hohendorf G (1993/2000). Wilhelm von Humboldt (1767-1835), http://www.ibe.unesco.org/publications/ThinkersPdf/humbolde.PDF(2012-05-07). Originally published in Prospects: the quarterly review of comparative education. UNESCO: International Bureau of Education, Paris, XXIII(3/4)1993: 613–23.

Humboldt WV (1791-1792/1993), The Limits of State Action, Ed, Burrow, J. W. Indianapolis: Liberty Fund, 1993. (Ideen zu einem Versuch die Grenzen der Wirksamkeit des Staats zu bestimmen, written in 1791-1792, first published in 1852.)

Humboldt WV (1809-10/1982). 'Ober die innere und auBere Organisation der Ithheren wissenschaftlichen Anstalten in Berlin (1809/10)', in Littler, A. and Giel, K. (eds), Wilhelm von Humboldt. Schnilen zur Politik und zum Bildungswesen, Vol. iv, Wissenschaftliche Buchgesellschaft, Darmstadt, 255-66.

Humboldt WV (1903–1936). Gesammelte Schriften: Ausgabe Der Preussischen Akademie Der Wissenschaften. Vol.xvii, 1, Berlin. (Cited as GS in the text).

Jarausch KH (1997). 'The Humboldt Syndrome: West German Universities, 1945-1989—An Academic Sonderweg?' in Michell G. Ash (ed.), German Universities Past and Future. Crisis or Renewal, Berghahn, Providence, 33-49.

Lenz M (1910-1919). Die Geschichte der koniglichen Friedrich-Wilhelm-Universitat zu Berlin, Halle, Vol,3.

Lowe R (undated). The meaning of university education: Functional and aspirational education systems. The University of Durham, Queen's Campus, United Kingdom.

Moulder J (1995). Universities and Africanisation, South Afr. J. Higher Educ., 9(1), 7-8.
Ringer FK (1969), The German Academic Community, 1890-1933, Harvard University Press, Cambridge.
Scheler M (1926). Die Wissenslimen und die Gesellschq fi,licipzig: 1)erneue-Geist-Verlag.
Schelsky H (1963). Einsamkeit und Freiheit. Mee und Gestalt der deutschen Universitiit und ihrer Reformat, Reinbek bei Hamburg, Rowohlt.
Sorkin D (1983). Wilhelm Von Humboldt: The Theory and Practice of Self-Formation (Bildung), 1791- 1810, J. History of Ideas, 44(1):(Jan. - Mar.), 55-73.
Spranger E (1919). Ober das Wesen der Universittit, Leipzig: Meiner. (1930), Das Wesen der deutschen Universitat', in Michael Doeberl et al. (eds), Das akademische Deutschland, vol. III, Weller, Berlin,1-38.
Titze H (1989). `Hochschulen', in Dieter Langewiesche and Karl-Heinz Tenorth (eds), Handbuch der deutschen Bildungsgeschichte, 1918-1945, C. H. Beck, Munich, 209-58.
Varrentrapp C (1889). Johannes Schulze und das hohere preussische Unterrichtwesen in seiner Zeit, Leipzig.
Von Bruch R (1997). 'A Slow Farewell to Humboldt? Stages in the History of German Universities, 1810-1945', in Mitchell G. Ash (ed.), German Universities Past and Future. Crisis or Renewal? Providence: Berghahn, 3-27.
Westbury I, Hopmann S, Riquarts K (2000). Teaching as a Reflective Practice. The German Didaktik Tradition. Mahwah, Lawrence Erlbaum Associates, New Jersey.