

A personal narrative of an educational journey

Introduction

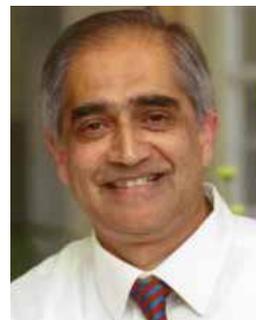
I share some personal views on education without any formal pedagogical training but through a lifetime's experience of learning and then teaching, mentoring and wardening at the University of Cape Town (UCT). As a medical biochemist I have restricted my views and approach to learning in this area. It is my good fortune to be associated with UCT, which has taken the initiative to address many of the issues mentioned here, continuously re-appraising and evaluating its programmes of teaching and learning.

Education as a transformative experience

It is my view that education has to be transformative for it to have any value. Matters of teaching and learning must be guided by ethical principles, which in turn define trusting relationships in a learning environment, in which learner and teacher grow together. The idea of transformation is broad, taking on different meanings in different contexts. Whilst our campuses boast of producing the best graduates, ready for the job market locally and internationally, the cries of protesting students that the curricula on South African campuses are Eurocentric and not relevant for Africa, are not unheard or unheeded.

I propose an alternative view of transformation in education, one that is inextricably linked to the curriculum, and which does not focus on the 'decolonisation' of the curricula. What I am seeking is a revolution of the mind, a fundamental change in consciousness which empowers our learners to function as citizens and not subjects and which repudiates any claims to ownership of knowledge by any group, be it African or European.

My argument is that, despite producing top-class graduates in every field, the design of our curricula needs to be continually interrogated to produce a 'holistic' graduate, the curious life-long learner, one who is equipped, upon graduation, to deal with the major afflictions of our society, like racism, inequity and poverty, and corruption. I share some experiences that moulded my ideas since my student and early career days during apartheid and the post-apartheid period whilst on the staff at UCT. These experiences are transformative in the sense that a foundation of independent thinking in which freedom of thought and speech are valued is established, and on which further knowledge is built. The exciting possibility is one of being able to extrapolate from this knowledge-base into related areas of knowledge, thus creating a worldview.



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The entry experience

It is a fact that students entering university for the first time do not all have the same level of preparedness. Many are at a disadvantaged starting point through poor schooling, lack of motivation and readiness, and feelings of alienation and inferiority about being at a university, particularly at an historically white institution, where the experience could be very unwelcoming. The recent ‘Rhodes must fall’ campaign at UCT declared this very stridently. Often young ‘freshers’ in the residences cite loneliness as the single-most important factor causing unhappiness. Added to this are poor study methods, being overwhelmed by course content and guilt about being privileged, whilst parents struggled to meet fee payments. Then there are the difficulties of English not being the first language of many of the students who, in addition are expected to learn the ‘language’ of medicine. These examples are cited out of my actual experiences.

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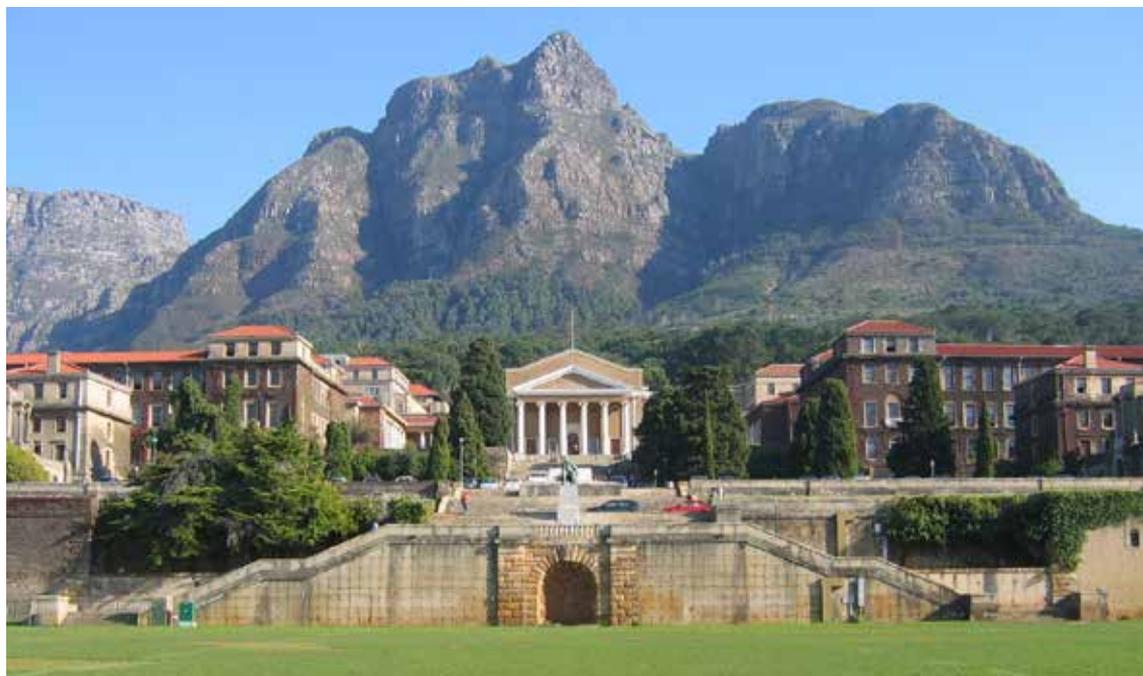
The university’s responsibility

It is imperative that our tertiary institutions have programmes in place to deal with issues of alienation and disadvantages of the past. The starting point must be a good orientation programme that is extensively informative, welcoming and participatory. This is a delicate period for new students when the tone is set for the rest of their undergraduate careers. The programme should highlight the possible difficulties, both academic and otherwise, that a student may be confronted with. The role of senior students as mentors in this process is invaluable. The UCT

Faculty of Health Sciences established a student support programme (available to all students throughout the duration of their degree) comprised of extremely dedicated members of staff who give of their time to ensure that all students flourish within the faculty and are academically successful. Non-academic problems, an impediment to academic success, require the service of senior students acting as mentors to their junior peers. The Problem-Based Learning (PBL) curriculum offers the advantage of placing the responsibility of learning on the learner and gives the tutor the opportunity to interact more closely with individual students in small groups in a pleasant classroom setting, conducive to learning.

Classroom learning

Any field of learning can be an entry point into something deeper. Teaching must take place in a manner that fundamentally transforms young minds, giving them a new and empowered way to view the world. It should not be a case of mere facts to be learnt from a text, but a living experience. The very processes and chemical reactions being described are happening in our bodies, keeping us alive. For example biochemistry, the study of molecules in a living cell, takes one from biological macromolecules to higher levels of organisation such as cells, tissues, physiological systems, organisms, consciousness and society. This involves the concept of ‘emergence’, as organisational complexity increases from the bottom up, with each new level of organisation being more than the sum of its parts, around which there is exciting discussion between scientists, philosophers, theologians and educationists.¹ Underpinning these facts is a philosophy which becomes a part of normal discourse, and a new and transformed way of thinking. There must be an appreciation of the contribution of science to humanity, a recognition that



every statement in the textbook is based on evidence and somebody's blood, sweat and tears.

A classroom topic need not be confined to the content of that topic alone. Links can be made with other topics to widen the interest of the students. For example, the metabolic pathways in our cells produce energy in the form of ATP from glucose, to keep each cell functional and alive in health, disease and starvation. The pathways make adjustments to ensure that energy is still available under dire circumstances. Such a topic in biochemistry has wider implications for societies and with the aid of social media², the focus shifts to world events, in this case major starvation epidemics in the world. This can trigger a different discussion about starvation on our continent, raising issues of poverty, administrative bungling, colonialism and post-colonial dictatorships, corruption and incompetence of leadership. Thus a biochemistry topic is placed in a wider context, indicating how the health of the individual is linked to societies and matters of politics, all very important in the understanding of the complexity of this world. There is a new focus on interdisciplinary learning at UCT and a recent initiative has been the introduction of the Medical Humanities, a link between medicine and the arts, to bring together two seemingly disparate fields of study, forever divided.

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Intervention in its various forms is necessary in the case of the struggling student. One example is the intervention programme, by which the medical curriculum accommodates a parallel stream at the end of the first semester. Students requiring more attention are identified and diverted from the mainstream course for a year

and provided with guidance from specialists, enabling them to look both backward and forward in their course. This is an amazing support tool that allows a learner to reflect and get a deeper insight into both the coursework, study methods and an opportunity to address personal issues that could impinge on a career.

Out of classroom learning

There is ample opportunity to learn outside the classroom, especially in a dynamic and diverse living and learning space such as in a residence. There is a shift from the notion of a residence being a mere bed-and-breakfast to a 'learning space'. Besides tutorials, there is another kind of learning that takes place there, one designed to build leaders, to encourage students to grow attitudes of tolerance and respect for

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the other, without compromising the development of a critical faculty. Residences have cultural events and entertainment activities of an educational nature like debates, which foster integration in a community or family of peers. Dedicated wardens oversee each residence and participate in creating an environment that offers life-lessons. Residence fellows, who are UCT staff members in various fields, are invited to share their experiences, broadening the minds of our youth. It is no coincidence that many young people making a mark on our society today have had a residence experience at their institutions.

School and University

I am able to empathise with the plight of many students today because of my own experiences. My conceptual development had been delayed, growing up in the apartheid era and attending an under-resourced school for Indians, in a little hamlet in the Natal Midlands (ironically, in retrospect a better schooling than what many receive today). Rote learning was the only method of learning I knew, reinforced by memorisation of long Arabic verses in the Holy Qur'an from a very young age in a traditional religious environment. At school I was unable to grasp the significance of the atomic structure of matter or that the cell was the basic unit of living matter. Upon matriculation I entered the University of Durban-Westville (UDW), formerly the University College for Indians, one of many tertiary institutions established by the apartheid government, in line with its separate development policy. My schooling had not prepared me for higher education. I had no conceptual framework, and saw no links between my voluminous first year subjects, never mind the links and continuities between topics within a single discipline! Lecturers taught with a condescending attitude. The lecturer-learner relationship, in many cases, was underlined by a sinister racism and manipulation of a vulnerable student body, within the context of an inhumane political system. Political protests against apartheid (in itself a learning experience) were common, disrupting learning. I can barely recall any worthwhile kind of orientation and academic support programme for new students, such as the excellent ones we have at UCT today.

Beginnings of transformation

I shall always remember the day when, in desperation, I realised that the compartmentalisation of subjects was arbitrary and that everything in the Universe was linked and related. That was the first self-initiated step to transformative thinking which I carried through to my teaching, an epiphany in the second year

of my undergraduate degree! I felt as if I had unlocked a mystery of the Universe, stepped upon one of its secrets, a new world view that was to transform my mind forever. I now had a foundation on which I could build a body of biological knowledge that led from atoms to consciousness and beyond, into culture and society. I was overtaken by a habit of seeing relationships between all things, no matter how bizarre and remote from each other two objects of interest could be. Everything, all matter was made of atoms, the different arrangements of which produced a human, cat or tree! If it were biological or scientific concepts I was thinking of, I tested my own understanding of the concept before verifying the information in a prescribed text or in discussion with somebody. I had become a self-initiated learner and ‘find out for yourself’ became my dictum. A new worldview and an unquenchable thirst for knowledge emerged that went beyond academic subjects to other pertinent issues in life. My curiosity had been triggered and life had taken on a new meaning, and it continues to this day!^{3,4} It is curiosity that sparks the passion for wanting to know, and knowledge, in the words of John Henry Newman, is power⁵. I had become an unashamed reductionist, forever seeking out the fundamental component or particle of any system under consideration, including the Universe.⁶

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I made a commitment then, that if ever I were to teach, I would approach it in a manner that stimulated and instilled the joy of learning and teaching in students, thus contributing to creating ‘learners for life’.

The lifelong learner

It is extremely regrettable that there is no culture of reading in our society and institutions. As an undergraduate my readings outside science, more in politics, brought with it a gradual development of critical thought that pervaded my personal, social and academic life. I developed a general attitude of being more critical about what I was learning rather than being a passive recipient of unrelated facts. I now questioned everything – ‘the path to holiness’ according to Peck⁷. The ‘big’ questions of life, existence and meaning and the relevance of what I was expected to know came to mind. It was the beginning of a new dawn, an exciting time that I would never have predicted, in a curiosity-filled world^{3,4} in which learning became a joy! Unbeknownst to me I was laying the early foundations of the teacher I was going to become, to share with future students many of the exciting ideas that grew out of my tough early experiences and occupied me with such intensity. In retrospect what was developing in my mind was the idea of integrated learning, much in vogue today. A teacher should refer students to relevant reading material outside the formal curriculum. At the end of the day, a university experience should give one a worldview and a transformative philosophy of life which equips one to face the many challenges of the day. Many great minds were transformed by looking deeply into their own disciplines, and subsequently creating a philosophy of life which embraced a whole lot of seemingly disparate and unrelated ideas and concepts into a unified whole, as shown below.

A worldview

In 1859 Charles Darwin famously wrote in his *The Origin of Species*, ‘There is grandeur in this view of life, with its several powers, having been originally

breathed into a few forms or into one; and that whilst this planet has gone on cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved'.⁸ One cannot doubt that the formulation of his theory, which itself evolved over time, stirred something very deeply in Darwin, an awe and wonder of nature, akin to a spirituality. Humans were taken off their lofty pedestals and humbly placed into the animal kingdom; all forms of life were related, as modern genetics later confirmed⁹, with no room for racism.¹⁰ Evolution is the very grammar of biology¹¹ and nothing in biology makes sense except in the light of evolution.¹²

The scientific account of nature which starts with the Big Bang, the formation of stars and planets, the origin and evolution of life on Earth with all its diversity, the advent of human consciousness and the resultant evolution of cultures, have the potential to unite us because it is a common narrative for all living forms.

Albert Einstein's worldview grew out of his science and observations of the physical Universe, which included atoms and light-quanta, space and time, electromagnetism and gravitation, with their motions and interactions governed by precise mathematical laws. He saw in it a connection of all things at a very deep level. This humbling experience formed a basis of his philosophy and which influenced, for example, his political view regarding the establishment of the state of Israel, which he supported, if and only if, Israelis and Palestinians could live together in harmony, without discrimination and the power-mongering that accompanies military superiority. Einstein warned that nuclear weapons were not the

answer to the long-term security of any nation. He was a pacifist who believed passionately in social justice.¹³

Phillip Tobias, the late Wits polymath, who had made a special study of race and fossil ancestry in South Africa felt that he would have been failing his academic ethos if he did not protest against apartheid, when the scientific truth about race ran counter to the assumptions of apartheid policy.¹⁴ He worked to expose those responsible for the untimely death of the Black Consciousness leader Steve Biko, to return to South Africa the remains of Saartjie Baartman and to protest against the apartheid government's exclusion of blacks from universities. He showed that the San, like the rest of humanity, had 46 chromosomes, a serious blow to racist thinking.^{15,16}

Edward O. Wilson, the Harvard University biologist, who classified most known species of ants, had an epiphany when he discovered the theory of evolution as a first year university student. He experienced the 'Ionian Enchantment', a conviction that the world is orderly and can be explained by a small number of natural laws. The opening line of his book *Consilience* reads 'I remember very well the time I was captured by the dream of unified learning'.¹⁷ Wilson realised that his contemplation of his ants led him to 'climb the steps in biological organization from microscopic particles in cells to the forests that clothe mountain slopes'.

These examples illustrate that a serious and insightful reflection of one's studies, can be an entry point into a larger empowering and transformative world that encompasses the learner's relationship with society. There is a need for a global tradition that begins with a world view, independent of culture, religion, race and ideology¹. The scientific account of nature which starts with the Big Bang, the formation of stars and planets, the origin and evolution of life on Earth with all

its diversity, the advent of human consciousness and the resultant evolution of cultures, have the potential to unite us because it is a common narrative for all living forms.¹ We are all stardust! Each one of us has journeyed from being a single fertilised cell or ovum, through the various stages of gestation and development to a fully-fledged human being.

Conclusion

In 1979 Peter Vardy, a medical practitioner, wrote that education should be about producing a person with an enquiring, curious mind for life, available to anyone at any time of life. With proper education there can be no boredom!¹⁸ Phillip V. Tobias reminded students that whilst there was a demand for specialisation today, ignoring other branches of knowledge was inadvisable. A specialist in one field should be able to carry on an intelligent conversation in the other fields of human endeavour. 'That is the mark of an educated person'.¹⁹

My focus has been the transformation of the individual mind as a first step towards transforming society, through the love and deep reflection of knowledge. It becomes the duty of our institutions to provide the context for self-initiated learning and scholarship to produce a new kind of graduate.

Acknowledgement

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