

GLOBAL
SHIFT

BURNING
FOSSIL
FUELS

MIGRATION

SEVERE
CLIMATE
CHANGES

POLLUTION

NEGATIVE
IMPACT

INDUSTRIAL
DEVELOPMENT

TVETs

at the cusp of
innovation in
renewable energy

Against the backdrop of a country and continent reeling from the fading dreams of national liberation movements, debates about the fault lines and alternative visions are gradually receiving some attention. Growing unemployment; a lack of progress on land reform; a diminishing state unable to provide social welfare services to its citizens; calls from different sections of our society for ‘free education,’ a ‘decent living wage,’ ‘decent housing,’ and numerous other demands, have brought into focus proposals regarding practical alternatives available within and beyond the constraints of political will, economic will and institutional capacity.

Recent advances in renewable energy technologies within the context of the global climate change crisis (as a consequence of the fossil fuel driven industrial revolution in the early 20th Century) have opened up the space for imagining alternatives, particularly for energy generation and consumption. These range from individual households or community centres to entire communities, industrial plants, cities, towns and villages. If we are to make use of these different imaginings, or at the very least ensure a deepening and widening understanding of different possibilities, thorough engagement within society - especially with educational institutions, will be key.

In the education domain, one of the key areas left by the wayside following the debates surrounding the #FeesMustFall movement has been the role, function and demands from and to the Technical and Vocational Education and Training (TVET) colleges. In January 2017, 15 of the 50 TVET colleges in South Africa were shut down over demands, which included calling into question lecturer quality; problems in the process to release completion certificates; lack of funding provided under the national student loan scheme (NSFAS); and the late payment of transport and accommodation allowances (<https://mg.co.za/article/2017-01-19-15-tvet-colleges-shut-down-over-unresolved-issues-with-higher-education-department>). Over and above the day-to-day challenges raised by students within the TVET sector, lie deep challenges ranging from chronic underfunding from government; low levels of integration across the higher education system; and contentions around the role of these institutions as they relate to both the economy and society as a whole. The TVET sector was established by the Department

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of Higher Education and Training as part of the early post-1994 democratic reforms to “ultimately meet human resource needs. TVET systems are built to address these needs and to further promote personal, social, civic and economic development in their country” (<http://www.unevoc.unesco.org/go.php?q=Revisiting%20global%20trends%20in%20TVET%20Reflections%20on%20theory%20and%20practice>).

The transformation process of education in the post-1994 period emerged from a fractured and openly unequal education system established under an oppressive apartheid regime. This regime used its ideology of racial superiority to manage and control a racialised capitalist society which was characterised by stronger parastatals which offered skills development, training and jobs to primarily working class ‘whites.’ This system also reinforced a gendered division of labour - women were assigned the task of reproductive labour.

In the early post-apartheid period, the country was already experiencing the impact of World Bank and International Monetary Fund imposed structural adjustment. These structural adjustment programmes (SAPs) gained further traction when South Africa adopted the Growth Employment and Redistribution (GEAR) strategy – a strategy that became known as South Africa’s self-imposed SAP. The impact of this economic policy choice had significant effects on



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educational institutions. Post-apartheid institutional transformation is characterised, amongst others, by mergers and take-overs, an increase in the privatisation of education, the introduction of user-fees and disinvestment in public education. All these changes affected artisanal and craft training which now falls within the ambit of the TVET system.

International implementations of the TVET system from Korea, the United States of America, India (amongst others) have led to fierce debates about the purpose of these institutions (<https://norrag.wordpress.com/2015/08/25/skills-development-vs-tvet-vs-education-vs-work-who-is-the-winner-after-shanghai-incheon-and-kuala-lumpur-conferences/>). Are TVETs to be geared towards the specific needs of the economy? Global and local industry? Are TVETs rather geared towards skills development? Or should they serve a broader vocational purpose, one which is responsive to community needs and issues?

In 2017, in a report released by StatsSA, unemployment (as described as including discouraged workers) stood at a crisis level of just over 36% (<http://www.fin24.com/Economy/youth-unemployment-in-sa-a-national-crisis-economists-20170807>). Furthermore, an increase in casualisation of labour and a stagnant economy has led to a scenario where the rapidly expanding number of TVET students are being prepared for jobs that perhaps no longer exist. In the context of the renewable energy discussion, the question of future employment, alongside critical engagement in the social, political and economic state of the country by both educators and students is absolutely key in creating the conditions for shaping alternative programmes for these institutions.

Developments in renewable energy open up an opportunity for critical reflection within learning spaces on the role of industrialisation in the environmental crisis that has made 'clean energy' innovation such an urgent global imperative. This opportunity should be

seized by taking forward engagement with renewable energy in TVETs and other similar institutions beyond the technocratic rationality and link it to our political economy and national ecology.

In reflecting on programmes of the past we recall (now 40 years on) Tanzania's late President Julius Nyerere's well-known Arusha Declaration, which outlined the key policy of 'Education for self-reliance.' This programme articulated a vision of a reformed education system geared towards promoting 'self-reliance' in society by re-imagining institutions towards an agrarian village-based economy of post-independent Tanzania. Lessons learnt from the Tanzanian experiment point to ways in which educational institutions could be re-engineered as sites of social transformation in order to meet the needs of a society. The debate around TVETs in our context should include an ongoing process of collective reflection and action in order to reshape these institutions from being trapped in the ebb and flow of industry and the 'job market' demands towards spaces of critical engagement, inquiry and upskilling that address problems in the real world and those prevalent in our immediate contexts.

The opportunity presented by technological innovation and lowering costs in renewable energy systems offer key and important entry points into thinking through the future of TVET colleges and their relationship to communities, society and the economy. It is important to not simply adopt an uncritical acceptance of particular trends about renewable energy, but instead to expose students, lecturers and learning communities to resources, ideas and regular practical developments that link the local historical context and urgencies to global developments, opportunities and limitations presented by renewable energy systems. Efforts of this scale and depth will require cross-sectoral partnerships within the higher education system, between key industries, and alongside the communities for whom these technologies are most beneficial.

*An opinion piece prepared by Brian Kamanzi,
Research Associate at the Centre for Integrated
Post-School Education and Training (CIPSET),
Nelson Mandela University*





ENERGY AND WATER SECTOR EDUCATION AND TRAINING AUTHORITY

NELSON MANDELA
UNIVERSITY

CONTACT INFORMATION

Education, Work & Society: Community Education Programme
Centre for Integrated Post-School Education and Training

DVC: Research & Engagement

Rm402 Building 519,

Missionvale Campus

Nelson Mandela University

Telephone: 041 504 3924

Email: Ajeftha@mandela.ac.za