SEFAKO MAKGATHO
HEALTH SCIENCES UNIVERSITY

DVC: TEACHING, LEARNING AND COMMUNITY ENGAGEMENT

Prof Eunice Seekoe, a distinguished academic who has made a meaningful contribution in the higher education space has now joined the SMU as DVC Teaching, Learning and Community Engagement. Padi Matlala from communications speaks to her to find out her plans in this critical portfolio.

As Deputy Vice Chancellor (DVC) teaching, learning and community engagement, what is it that you are planning to do to prepare health professionals trained at Sefako Makgatho Health Sciences University (SMU) to meet the demands of the NHI and the 4IR?

Sefako Makgatho Health Sciences University is in its fifth year of existence and is the only one of its kind in South Africa. Human resources are critical to the achievement of Universal Health Coverage reform. Competent health professionals are required to ensure high quality health systems and success in the NHI implementation. South Africa is introducing a national Digital Health Strategy required for the implementation of the National Health Insurance (NHI).

The NHI and the National Digital Health Strategy during the 4IR will transform the way health services are provided and the way in which health professionals engage with services. The 4IR takes place at an opportune time for transforming the health system in South Africa. These innovative transformative imperatives present great opportunities for educating health sciences students at SMU.

These innovations will benefit patients who are seeking access to health care services. Patients will be empowered to make choices of health facilities to use based on the quality of care they receive. Health systems managers will be able to fulfil their roles. Health care professionals will provide better services and empower all citizens to manage their personal health routines using Digital Technologies. SMU graduates will contribute towards health sector priorities in assisting the country to deal with the quadruple burden of disease, improving quality of health care, improving mother and child health and support health systems transformation for the NHI.

In order to support the above, I will ensure that SMU produces health professionals with the right skills, competence and values, who will graduate as transformational and ethical leaders, self-

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directed and lifelong learners. SMU will produce graduates who are independent, critical thinkers, problem solvers, decision makers and team workers who embrace technology and communicate effectively. These graduates will be able to identify, analyse and address the health care needs of individuals, families, community and the population at large.
SMU graduates will be able to respond to the National Department of Health's Strategic Principles of a person-centred focus, expanded access, innovation for sustainable impact, digital health work force for economic development. Our graduates will be able to compete locally and globally.

As DVC how are you going to ensure that the core business of teaching, learning and community engagement is responsive to the demands of the 4IR?

The 4IR is the integrated and compounding effects of multiple exponential technologies such as Artificial Intelligence (AI) biotechnologies and nanomaterials. The Internet of Things (IoT) where anything can be designed on a computer and printed on 3D printer that creates objects in countless materials or even biological tissue. This ability will allow health sciences practitioners to turn data into things and things into data.

In order to function within these transformation imperatives of the NHI, Health Digital Strategy within the 4IR, SMU will align its graduate attributes, curriculum, teaching and learning methodologies including the capacity of academic staff and increased infrastructure. We will deal with all these as stated below in detail:

GRADUATE ATTRIBUTES

We need to re-invent the SMU education to develop creativity, innovation, curiosity and critical thinking. We will ensure that students are skills-ready and also leverage technological advances of tomorrow. We need to leverage, creativity, cognitive flexibility and emotional intelligence for our graduates to function as professionals in the 4IR. The inclusion of ethical thinking, intercultural awareness and critical thinking will allow for the emergence of thoughtful and informed cadre adept in the application of the exponentially developed technologies.

4IR places a premium on adaptability and in self-directed learning and thinking skills. Integrated transdisciplinary teaching and learning are required in order to develop greater capacity for ethical and intercultural understanding. Acquisition of new knowledge by students, academic staff and alumni with new modalities of instruction that leverage the digital advances from the Third Industrial

Revolution accelerating workforce skills, will shape the future of health care sciences education at SMU. These will maximize the development of intercultural and interpersonal skills which will be the hallmark for the future of the 4IR health care work place.

There will be a need to build capacity for teamwork and collaboration within students. The changing nature of work will favour more flexible and shorter-term assignments, which are key features in the 4IR education.

Future jobs within 4IR technology sectors such as Artificial Intelligence, machine learning, robotics nanotechnology, 3D printing, genetics and biotechnology are expected to dominate in the coming decade. Our health sciences education will emphasise social skills such as persuasion, emotional intelligence, and capacity for teaching others, as they will be at a premium.

SMU students will learn to grapple with complex issues of relationship with online spaces and philosophical dimensions of digital health technology.

Our students should be capable of creating insights, collaborating in diverse teams, and navigating through global culture differences. These competencies will prepare students for the workplace in order to be able to interpret rapidly changing information and being able to work with experts and stakeholders towards a common understanding of sustainable development.

CURRICULUM

To equip students for the 4IR requires a holistic approach to curriculum development that will give them the ability to keep pace with innovation and meet challenges of this new world of work.

Science and technology curriculum will allow students to develop capacity in rapidly emerging areas of genomics data sciences, AI, robotics and nanomaterials. The 4IR Health Sciences students will be prepared with a curriculum that emphasizes basic sciences such as biology, chemistry, physics and place higher priority for training in computer science subjects as a form of literacy.

The SMU curriculum for the 4IR will respond to the political environment within the accelerated pace of digital health technological change and respond to the paradox of technologies that will simultaneously increase democratization and centralise good health, wealth and political influence.

The curriculum will explore new emerging concepts of self and identity including decision autonomy, free will and genetics. SMU students will not only learn to solve a scientific problem but will also emphasize inter-connectedness between their own problems across global scales and interaction between physical, chemical, biological and economic dimensions of a problem.

The impact of the energy 4IR technology in economic and environmental terms alone will require a drastic reconsideration of the curriculum in SMU to enable students to both comprehend the individual technologies in detail and to be able to thoughtfully analyse and predict the evolution of networked systems of technology, health environment and socio-political system.

TEACHING METHODOLOGY

The teaching methods for achieving the required graduates for the 4RI and the NHI implementation will emphasize Information Technology. Student Centred pedagogies such as e-Learning, Case Based teaching, Problem Based –Learning and Community Based Education will be preferred. Such active learning pedagogies that place a premium on collaboration with diverse teams in a project-based and peer-learning environment will be required to develop capacity for collaboration and social interaction within Health Sciences. Such pedagogies encourage active learning, bring the world to the classroom and create more global, interdisciplinary learning with greater emphasis on strong collaboration between students and the communities.

A formal academic support strategy will ensure access for success and make sure that our graduates are marketable in the future agile and complex work place.

The 4IR educational plans will further build on the work we have started in the third industrial revolution such as hybrid online in-person instruction and efficient and seamless integration of global videoconferences and a wider array of advanced technological sources. Blended instruction and optimization of flipped and on-line courses will make more efficient learning environments that can adapt for diversity in preparation of students. Online courses will leverage and strengthen the residential education for undergraduates and give more flexibility in different courses.

In some programmes, courses will be delivered entirely online with in-person component to focus on students and make space and time for them to experiment and apply practical skills in different

areas. These efforts will make courses to be less stressful due to the ease of scheduling and additional speed for receiving feedback for students.
This will ensure that learners update their skills and teach themselves about new health technologies and new industries that may not have existed while they were trained for their initial degrees.

SMU will embrace and stress multidisciplinary, interdisciplinary over disciplinary content. The students of SMU will graduate in a world that they can help shape with wisdom and skills. Graduates that will be capable of advocacy, the material of the future world which creates the cultural advances in technology, both substantially and ethically.

Students and academic staff must be prepared for leadership roles in a rapidly changing world within a curriculum that will develop both technological mastery and a deep awareness of ethical responsibility towards the human condition. Scientific and technological advances in health promise to transform health and healthcare to become much more connected, precise and democratized with significantly improved human outcomes

ACADEMIC STAFF

The Centre for Teaching and Learning at SMU will focus on developing the scholarship of teaching and learning in preparation for the 4IR. Academic staff will have capacity to facilitate learning through student/ learner cantered methods including blended learning. Qualified Educators will offer short courses on curriculum development, teaching, learning and assessment. CUTL will offer formal programmes such as a Health Sciences postgraduate diploma in higher education. There will be additional Services such as teaching evaluation, curriculum development support and e-learning utilisation. Academic support for students will be the flagship service provided in this unit. This will be the most vibrant centre in the university. The number of PhD qualified academic staff will increase. Local and international curriculum and skills exchange will be achieved through increased number of strategic partnerships. Excellence will be recognised within a vibrant teaching, learning, and community engagement culture of SMU.

INFRASTRUCTURE

Available funds received from DHET will be effectively utilised to establish world-class teaching learning, assessment and simulation facilities. Funding will increase through the support of strategic partners and generation of the third stream to advance SMU and prepare it for the 4IR.

You have been around for some time at SMU and I take it that you have had an opportunity to scan the environment and are able to make sense of the institutional culture, the soul and heartbeat of SMU. What are your general impressions of the institution?

Coming into a new environment presents opportunities as well as challenges. When you have stayed in a particular environment for a long time and become part and parcel of its social and cultural life as well as politics, it is difficult to move away from it and get used to a new one. There is a Newton's Law about that. You will understand my difficulties. But I must tell you that I have had those proverbial first impressions which matter a lot.

When I came for the interview, it was my first time at SMU. I found it to be a welcoming and beautiful campus, with friendly staff and students. At two previous universities where I have been before parking has been a contested space by staff, students and visitors. The narrative is different at SMU. The weather is different from where I come from, I looked through the window of my office, I saw red dry soil with short trees different from the evergreen coastal environment and climate surrounded by Indian Ocean.

I have seen the smiles and warmth and the "not-so-sure". You definitely should expect that. However, in the highly integrated world and global village that we have it is unlikely that you cannot find at least one individual who has a negative opinion about a new person. Some might see it as an opportunity to continue unfinished ancient battles, some of which you did not even know existed. Luckily academics do not normally operate at that level, so there is no danger of that happening here. In the same way, I have not seen anybody here that evokes ugly memories that I want to carry out reprisals about. So we start on a completely good footing.

However, there are important things that one must take note of. This is an important location and rich environment for making change. The vast area of undeveloped land is a positive thing and presents an opportunity to implement physical developments that reflect the notion of a health sciences university, one that immediately assures you that you are entering an environment where health care professionals learn, it has to convey that atmosphere.

The location away from the hustle and bustle of the vast metropoles of both Pretoria and Johannesburg is also a wonderful gift because you can have the peace and quiet to get things

done. If you think of a good thing to do but you don't have the space to do it and you don't have the time to do it, that knowledge is wasted. The relative youth of the institution is an opportunity to make it everything other Universities want to be but cannot get because they have reached the limit of the physical space to grow

I observed that SMU connects with its communities through different sources of media including its vibrant Radio SMU. Students are mostly active and make the campus vibrant, I liked the creativity, ideas of how they see the future and different societies. The BFM student body welcomed me even before I arrived. I can see that my next five years will be hectic and surrounded by creative youngsters. Academic and administrative staff members are equally eager to take SMU to the next level.

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