

# *Tertiary TVET: Pathways for Pioneers*

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*University of Vocational Technology (UNIVOTEC), Sri Lanka*

*Guest Address*

*Tertiary TVET: Pathways for Pioneers*

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Commonwealth of Learning*

## **Introduction**

It is a pleasure to be with you today and a special honour to give this guest lecture, which I understand may be the first such event at this new University. I congratulate Sri Lanka on the establishment of Dr. Krishna Alluri UNIVOTEC, which is truly a ground breaking initiative. Around the world nearly all Technical and Vocational Education and Training, or TVET, is at the secondary and postsecondary level. You have set your sights on providing Sri Lanka with a powerful motor for the development and expansion of TVET at the tertiary level. That is an exciting venture into a new space and the Commonwealth of Learning is honoured to be associated with it, first, through today's address and second, through the collaboration between COL and UNIVOTEC that I hope will be a sequel to my visit.

UNIVOTEC is, of course, only the most recent manifestation of Sri Lanka's commitment to building an integrated system of technical and vocational education. Many of the architects of that system, in both the Ministry of Vocational and Technical Training and the National Institute of Technical Training of Sri Lanka, are here today and I Joshua Mallet salute you all.

I have prepared these remarks with two of my COL colleagues, Dr. Krishna Alluri and Mr Joshua Mallet. Dr. Alluri, a distinguished expert on the nexus between education, learning and agricultural development, heads the COL programme sector that we call Learning for Livelihoods. I have just returned from visiting, in the eastern part of your country, the Lifelong Learning for Farmers programme that he initiated. This programme, which is being run in close collaboration with the Eastern University in that region and with other Sri Lankan universities in four other locations, is visibly helping to improve rural prosperity.

I pay a special tribute to Professor Uma Coomaraswamy, the former Vice-Chancellor of the Open University of Sri Lanka, who is coordinating this activity for us with great skill and wisdom. She is seen here with the other distinguished educators from around the Commonwealth who were made Honorary Fellows of COL back this July, and this picture was taken two days ago at the launch of the L3Farmers programme near Battacalooa.

My other co-author is Joshua Mallet, a colleague from Ghana who is leading on the implementation of a number of COL activities in TVET, particularly the distance learning programmes for the training of TVET teachers that we have facilitated. I shall mention those in a minute.

Talking of TVET leads me to pay tribute to another former Vice-Chancellor of the Open University of Sri Lanka, Professor Dayantha Wijesekera. We first met many years ago at a conference on engineering education in London and it was during his time as Vice-Chancellor that I had the privilege of becoming an honorary doctor of OUSL. Since then I have followed his career with admiration, particularly the way that he has both nurtured the University of Moratuwa, as Vice-Chancellor there, and also devoted his abundant energy and intelligence to the development of TVET in Sri Lanka by his work in the Ministry of Vocational & Technical Training and his involvement in projects like this one.

I said a moment ago that UNIVOTEC is a ground breaking initiative. For this reason Dr. Alluri, Mr. Mallet and I have chosen as our title today Tertiary TVET: Pathways for Pioneers. We mean two things by that. First, tertiary TVET is still largely an untilled field, so you are, by definition, pioneers. Second, people watch pioneers with special interest and often seek to give them advice about the directions they should take. We have fallen for that temptation and will, we hope constructively and without presumption, suggest some pathways that you should explore.

Those pathways are of two types. First, UNIVOTEC is a new University being created in the first decade of the 21st century. We believe that any university being created today must operate in a different fashion from universities set up in the 20th century and we shall suggest how it should be different. Second, UNIVOTEC is pioneering the new area of tertiary TVET and there is much to say about that too.

## UNIVOTEC: a 21st century University

What can we say about UNIVOTEC as a new University of the 21st century that proposes to address TVET in the fields of engineering, commerce, business studies and agriculture? We make five points.

First, UNIVOTEC has the great advantage of operating in Sri Lanka. Your country has excellent educational and social indicators and the best Human Development Index in South Asia, ranking 99th in the world. Sri Lanka has high literacy and impressive gender equality and gender equity. You are on track to achieve the Millennium Development Goals. This means that UNIVOTEC should have excellent material as incoming students and be able to create programmes with a good gender balance, pioneering technical and vocational careers for women that are not commonplace elsewhere.

Second, and most importantly for your future collaboration with the Commonwealth of Learning, we urge UNIVOTEC to be a pioneer in the TVET teaching, learning and research systems that it creates, and not only in the subjects that it teaches. Specifically, we urge you to introduce distance and eLearning from the very start. This will both increase the reach of UNIVOTEC across the complex geography of this country and also make possible international collaborations that will enrich both UNIVOTEC and its overseas partners.

In developing distance and eLearning you can take advantage of the considerable and successful investment that the Distance Education Modernisation Programme is making in a national infrastructure

of networks, equipment and trained people. Sri Lanka has good precedents for pioneering distance learning in new subjects. Not only were you one of the first countries to establish an Open University, you were also one of a very few countries to make science and technology a key focus of your Open University's programme.

Should you decide to operate at a distance COL can help you put in place the foundation of policy necessary. We are doing so at the moment with several Polytechnics in Africa under the aegis of the Commonwealth Association of Polytechnics in Africa (CAPA) because COL has learned that having an institutional policy in place for open and distance learning is an important foundation of success.

We can also help in more practical ways. Some years ago we helped the University of Technology, Jamaica to develop a distance learning diploma programme for TVET teachers. The first group of students were TVET teachers in the Bahamas and I was there when they graduated. Joshua was there for the second group, from St. Kitts & Nevis. All were full of praise for the programme, which had empowered them to feel the equals of their colleagues teaching other subjects who already had teaching qualifications. I can assure you that UNIVOTEC's role in training TVET teachers will have a huge impact on their morale. I should add that the programme developed in Jamaica was then taken up in Ghana and converted into a full B.Ed. programme for TVET teachers there by the University of Education, Winneba. If UNIVOTEC develops distance learning programmes COL would like to help you share them with other countries in a similar manner.

Third, it hardly needs saying that UNIVOTEC must be outward looking to partnerships of all kinds. You are a unique resource for Sri Lanka but you will not be able to fulfil your mission unless you are closely linked to a network of other players, private and public, in this country and overseas. At the international level we hope that one of your partnerships will be with COL.

In this country you have already laid strong foundations for that through your pyramidal structure for technical education with your nine Colleges of Technology, one in each province, operating at ISCED levels 5 and 6, and your 300 technical colleges and vocational training centres focussed on craft levels 1 through 4.

Equally important will be the partnerships with the employers of your graduates. Later in this talk we shall recommend for your consideration a form of pedagogy called situated learning design, which is all about relating classroom teaching to the communities of practice in which your graduates will work.

Our fourth point about the nature of the University is that UNIVOTEC has the advantage of providing education to learners across the age barrier. It must design its programmes of study in such a way that young secondary graduates as well as working adults, parents and students, who have suspended their education for various reasons, can enrol for Bachelor degrees. COL has assisted the University of Education of Winneba in Ghana to offer a Bachelor's degree in TVET to classroom teachers and will be pleased to assist UNIVOTEC too.

Fifth, unemployment is high in Sri Lanka, especially among rural young people up to 30 years old. There can be employment opportunities and also income-enhancing opportunities for the self-employed in adding value to agricultural and plantation products through post-harvest processing technologies that meet international quality standards. COL would like to build on our partnerships that I mentioned with

the universities in Sri Lanka for with the Lifelong Learning for Farmers programme, and also to explore innovative programmes in agriculture, plantation and food processing with UNIVOTEC.

We believe that there is also an opportunity for UNIVOTEC to produce new breed of agricultural graduate who will be able to meet educational needs that are changing rapidly with globalisation. Future agricultural graduates will have to help organise appropriate local responses to changing global markets. At COL we call them 'infomediaries' because in the modern world a vital function is to bring information to people in the rural areas so that they can use it to increase their incomes. As agricultural extension officers become a rare breed, we believe that a whole new profession needs to be created of people who can work confidently at the point where information and communication technologies meet development.

We should add too that COL is facilitating the production of eLearning materials in a number of TVET areas through the Virtual University for Small States of the Commonwealth. This is a network of 30 small Commonwealth states that are collaborating online to produce material for both classroom and distance teaching. Construction, fishing and disaster management are just three of the subjects being developed and the materials are available for anyone to use, not just the institutions in the small states. All this is being placed within a Transnational Qualifications Framework that the Virtual University network has developed in association with the South African Qualifications Authority.

## Implementing Tertiary TVET

Let us now turn to the challenges of implementing TVET at the tertiary level through UNIVOTEC. We shall make five points here too.

First, to have the positive impact that you intend on the development of technical and vocational proficiency in Sri Lanka, you will need to focus on training the trainers. One of your most important tasks will be the education of teachers for all levels. First, initial teacher training should focus on providing qualified TVET men and women at secondary, post-secondary and tertiary levels. Second, practicing teachers must be able to upgrade their skills and knowledge through continuing education. UNIVOTEC should organise its programmes to create a ladder of opportunity - or rather a climbing frame since not all progression need be vertical - linking all qualifications. Here you have the great advantage of a fully developed system of vocational qualifications to facilitate movement between levels. We hope, for example, that some of the farmers whom we are training in our Lifelong Learning for Farmers programmes can aspire to develop their skills and knowledge right up to degree level.

Second, as pioneers you have a unique opportunity to train cadres for industry. Your country's industries require people who can innovate through research and development. But they also need factory supervisors with sufficient skills to oversee and mentor the country's work force. These supervisors must rely on competent managers who understand the relevant vocational fields and can lead the workers with confidence. The managers should be able to maintain industry standards, to monitor processes and to review production practices in a reflective manner.

Third, UNIVOTEC can create new standards of practice by graduating the right type of professionals for the 21st century. This means ensuring that each student gets adequate practical expose to the reality of

their industry through attachment programmes with that industry. One of the strengths of open and distance learning is that makes it easier for industrial attachments to be assessed.

Another advantage is that with open and distance learning students can continue their studies when they are away from UNIVOTEC on attachment. There is abundant evidence that working by day and reflecting on that work through study in the evening is a powerful way of achieving deep learning and real understanding.

Although we have stressed the important of hands-on experience in acquiring the technical and vocational skills that allow someone to call themselves an industry professional, we recognise that some types of hands-on training is expensive to provide, can tie up important equipment, and creates a danger of accidents until a good skill level is reached. Today the creative use of information and communication technologies through computer-based training and simulation can be a valid substitute for part of the real-life experience when it is hard to provide.

Fourth, we urge you to innovate in pedagogy and methods of teaching and learning, as well as in the tertiary TVET content that you are pioneering. We have already mentioned the essential role of ICTs; both in the content of your programme and in the ways that you teach them.

A TVET programme without a strong ICT base is simply not a credible programme early in this 21st century. COL can help you engage in action research for this purpose and would like to see cooperation across South Asia in developing tertiary TVET in a reflective manner.

As regards pedagogy, COL has found that the use of Situated Learning Design is useful in teacher education as well as in agricultural education. We believe it could be very applicable to TVET programmes so let us explain it briefly. It is an empirical model for teaching based on the observation of successful learning situations. It is sometimes called situated cognition as well as situated learning.

Researchers set out to find contexts or cultures in which learning was notably effective and to determine why. They looked at the teaching of conventional school subjects like mathematics, reading and writing, but also at the teaching of practical skills, like snow skiing, which not something you can do much in Sri Lanka but very popular in Canada! In the case of skiing they found examples where the time to learn the skill dropped from two years to two weeks. They knew that they were making an important discovery and found six common features in the successful models.

These six critical factors were: apprenticeship, collaboration, reflection, coaching, multiple practice and articulation.

The evolution of the strategy of situated learning began some twenty years ago. Then the emphasis was on the importance of apprenticeships in bridging the gap between theoretical learning through formal instruction of the classroom and the real-life application of the knowledge in the work environment. The later development was to use the research on apprenticeships to create a model of instruction that could impact on classroom practice.

It was at this point that the five other features: collaboration, reflection, coaching, multiple practice and articulation, were added to the focus on apprenticeships. The fundamental point is that useful learning

will only take place if it is embedded in the social and physical context within which it will be used. Too often formal learning is divorced from authentic activity or from the ordinary practices of the working culture. Many of the activities undertaken by students are unrelated to the kind performed by practitioners in their everyday work. So situated learning design involves students in authentic practices through activity and social interaction.

A key aspect of situated learning is that the student be able to observe the community of practice at work. This can begin with observation from the boundary of the community and, as learning and involvement in the culture increase, the participant moves from the role of observer to fully functioning agent. The earlier phase of observation enables the learner gradually to understand the culture of the group and identify with what it means to be a member.

Clearly this kind of pedagogy is particularly important for UNIVOTEC. People often accuse other universities of educating people who turn out to be unprepared for real work in the field of their training. But UNIVOTEC has been expressly created to improve and expand training for technological vocations, so you must ensure that no one can level that criticism at you.

Fifth, and finally, while implementing tertiary TVET, you will have the advantage of a relationship with non-tertiary TVET. As we said earlier, people watch pioneers with special interest. You must decide on the nature of your relationship with the rest of the TVET sector. Here we pose just three questions:

How will UNIVOTEC programmes relate to the TVET certificate and diploma programmes available in the country?

Will you engage in the assessment and recognition of prior learning of adults who have no formal qualifications? We hope that you will, because it will enlarge your pool of students and recognise the reality that many people do acquire high levels of skill without formal training. However, a supplement of formal training gives people a better appreciation of why things are done the way they are done, and so greatly increase their effectiveness and potential for further development.

How will the region of South Asia and the Commonwealth community as a whole benefit from your pioneering strides? Any pioneering endeavour is by its nature international and we at COL would like to help you help others to learn from and build on your experience.

COL was created to help institutions like UNIVOTEC address questions such as these. We will be delighted to facilitate channels for partnership with other institutions and to help others across the Commonwealth who are working in this field to share your expertise.

## Conclusion

It is time to conclude and to wish UNIVOTEC every success with the exciting endeavour on which you are embarked. You are pioneering the creation of a new University. This is a University of the 21st century and we have made five suggestions about how you might ensure that UNIVOTEC is a thoroughly modern institution. You are also pioneering the area of tertiary level technical and vocational education

and training. We have made five suggestions there too. Implementing tertiary TVET has a significance that goes well beyond Sri Lanka and we shall follow your journey with interest.

Indeed, we hope that the Commonwealth of Learning will be able to accompany you on that journey. It has been an honour to give this guest lecture on behalf of my colleagues Krishna Alluri and Joshua Mallet. We hope that this will be just the first step in a fruitful relationship between COL and UNIVOTEC.