Getting Ready and Leading Higher Education in the times of COVID-19: An interview with Professor Dr Osman Hasan (Pro-Rector Academics) National University of Sciences and Technology, Islamabad, Pakistan.

Abstract

Purpose: The purpose of this viewpoint is to present an interview with Professor Dr Osman Hasan (Pro-Rector Academics) to get his perspective on getting ready and leading higher education in the times of COVID-19.

Design/ Approach/Methodology: A semi structured interview was conducted.

Findings: This viewpoint type of paper is the one person's personal view/ perspective, albeit, the person has a tremendous success in a top ranked national university with over a decade or experience as a fulltime researcher and academic.

Originality/Value: This viewpoint reflects the valuable considerations for leaders in higher education sector.

Keywords: Future of HEI, COVID-19, Teaching, Attracting Talent, Strategy,

Paper type: Viewpoint

About Viewpoint

This viewpoint is based on a semi-structured interview conducted by the Editor-in-Chief NUST Business Review Dr. Muhammad Naseer Akhtar in a view to get the perspective of newly appointed, highly decorated, and a seasoned academic with over a decade of experience Professor Dr. Osman Hasan (Pro-Rector Academics) at National University of Sciences and Technology, Islamabad, Pakistan

How do you see the future of Higher Education?

I have always been a strong advocate of the idea of the fourth generation university. The future universities must act as hubs of quality teaching and research to foster sustainable development, societal transformation and environmental protection while actively engaging with various internal and external stakeholders. Our goal as university leaders should be to provide an enabling environment to the students and teachers and our collaborators to achieve these objectives. However, this is not a very straightforward task considering the changing times; especially the COVID-19 pandemic that has revamped the university education across the globe.

Maintaining the high standards of teaching, research and stake-holder engagement remotely has been a challenge for most of the universities as they have always been operating in the face-to-face mode. We have been struggling with engaging the students in an online classroom, conducting the labs in the online mode, especially the ones that involve physical equipment, online assessments etc. We are looking forward to reverting back to the traditional face-to-face mode and thus are sometimes even fine with compromising the quality in this temporary phase. However, I believe that the online education is here to stay as it also offers some distinguishing advantages. For example, both faculty and students are getting accustomed to a greater sense of independence that would be difficult to let go for them when the situation normalizes. Similarly, consider the huge impact that the online conferences and teaching technologies are making – students around the world can learn from the best of the best teachers and scientists at almost negligible cost and the professors and researchers can disseminate their knowledge to huge audiences. This scenario is expected to lead to lowering the cost of education and there would be many international universities available that would offer cheaper and high quality education. For example, University of Cambridge has recently announced to make all their lectures available online, which would allow them to offer degree programs to students in their home countries; an option that is cost effective both for the university and the students. Thus, the future of higher education, as I see it, is going to be a mix of face-to-face and synchronous and asynchronous online model. So it's the right time to strengthen our online capabilities, such as making our online teaching and lab work more effective. We must develop ways to instil the ethics of remote working environments in our students as this is where the industry is moving towards as well due to its cost-effectiveness. We should start developing fruitful linkages with industrial and international partners while collaborating using the online platforms.

Based on the increasing skill based hiring at the industry, the future universities also have to diversify themselves to offer a mix of degree programs and short courses. With the world continuing to change at a more rapid pace in the future, there is going to be an increasing demand of developing new skills for professionals. In this regard, the universities have to work together with the industry to offer joint short courses and trainings to meet the demands of new technologies and changing work places. Ideally speaking the future universities campuses should house small setups of major industries on their campuses so that they can actively collaborate with them to solve real-world problems as well as meet their training requirements. Similarly, we should also focus on initiating interdisciplinary programs, like AI in finance or e-commerce, as the future is going to see more involvement of AI and autonomous systems in all walks of life.

With these changing times, I believe that the role of the university in elevating the economy, protecting the environment and transforming the society towards betterment has become even more important. Thus, I think that this is the time to innovate and rethink higher-education strategies, while updating our curricula and pedagogy accordingly.

Your vision for quality teaching?

In my view, teaching is all about providing an effective learning environment to the students. A good teacher has to be very well aware about the learning objectives of her course and she must bring a variety of learning methods to the class room to meet these objectives. Every one of us learns differently so it's the job of the teachers to introduce an active learning environment in their classroom by creating intellectually ambitious tasks and allowing the students to collaborate with one another in various activities.

Some of the common attributes that I have frequently spotted in the student feedbacks of our excellent teachers include knowledgeable, caring, friendly, patient, approachable. So it is clear that good teachers exhibit intellectual excitement, great interpersonal rapport and empathy. On the other hand, some of the commonly used wordings to describe ineffective teachers include absence of energy, monotonic voice, lack of organization and lack of concern/respect for the students. So the passion about the subject matter, delivering the content in an organized manner (by preparing a well thought out lesson plan before the class) and respect for the students are also essential traits of good teachers. Many of these skills are acquired with experience so it has been generally observed that experienced teachers perform better than newbies.

Presentation skills and the way to carry yourself in the classroom also have a great role to play in effective teaching. Technology is also an integral part of a modern classroom especially in the ongoing Covid-19 pandemic scenario. We as teachers must ensure that our online lectures offer more than any other recorded lecture that is available online. This can be done by actively engaging the students in two-way communication.

Why and how we should attract, recruit and retain the very best people?

The most important asset of any organization is its human resource and accordingly the universities require the best of the best human resource as they are the builders of the future of the nation. Being a public-sector university, we do have our limitations in offering compatible salaries to our private counterparts. However, our strengths, including the merit-based opportunities, the best student body of the country, the state-of-the-art research facilities and the research promoting culture, and the unique campus facilities, like on-campus housing, sports and recreation infrastructure, must be used to attract and recruit the best faculty and staff.

Retention is a challenge everywhere in this competing world but is the key to success especially for academic institutions. We have had our share of faculty retention issues in the past and I believe that by enhancing the working experience of our faculty and by giving them the sense of ownership, we can alleviate these issues. Moreover, I am also a strong believer of acknowledging the performance of our team members in various ways, including recognition and financial incentives, to motivate them to stay and perform better. I would like to come up with a feasible reward system for both our faculty and staff to improve our retention in the coming years.

What opportunities are there for NUST to operate at international level and create a real difference?

In my opinion, one of the biggest strengths of NUST is its merit based system, which is applied all the way ranging from student selection, faculty and staff hiring and implementation of policies. This has allowed us to attract the best students and faculty of the country. We also have a very diverse faculty profile as we can find faculty members with their PhD degrees from all across the world. These factors, coupled with our focus on research, innovation and commercialization and being located in a country with an enormous youth potential, provide us with a very unique blend of ingredients to excel at the international level. This has been also validated by our rapid gains in the international university rankings. We are already collaborating with various international organizations both at the faculty and university level. We need to further strengthen these collaborations and encourage international students and faculty to be a part of our community. We also need to focus on bringing the international industry, especially in the high-tech sector, to explore the opportunities in Pakistan through the NUST platform. This is going to be a win-win situation for both the collaborating partners as the international industries can gain from the relatively cheap HR and operating costs here in Pakistan while availing the excellent working ecosystem already established at NUST. While, for us, it will give great opportunities to our faculty and students to work and contribute at the international level and it would also benefit our national economy.

How should NUST respond to emergent situation such as ongoing pandemic?

The ongoing pandemic has really changed our lives at all levels. It is very unfortunate to see the people suffering and especially due to scarce resources all around the world. The universities have a large role to play in these tough times by engaging their highly qualified personnel to address the pandemic related economic, political and public consequences. Being the leading university of Pakistan, NUST has even a far greater responsibility.

Our faculty and researchers are actively working together to address the COVID-19 pandemic through a range of innovative projects. Some of the key outcomes include N-COVKIT – Coronavirus Testing Kits (CTKs), N-SAVIOUR – A low cost ventilator, AERON – Aerial Spraying Unit for Decontamination, N-ROVER - A Tele-Operated Decontamination Robot, COVIDCHECK – A mobile app for home-screening of virus and N-SAFE – A high quality sanitizer for microbial control. Moreover, NUST has been the forerunner in timely issuance of new academic policies and decisions to cater for the new challenges that we are encountering as a university in these uncertain times. Since, a large number of Pakistani universities look up to us so we have to set an example of making fair and empathetic academic decisions in these uncertain times as well as we have to continue to innovate and solve the new challenges that we are facing as a society and nation.

What do you remember of your own time as a faculty member at NUST?

I joined NUST School of Electrical Engineering and Computer Science as an Assistant Professor in 2009. Before that I was in Canada for 10 years that I utilized to do my MS, PhD and postdoctoral fellowship as well as to work in the industry for a couple of years. So joining NUST was not only a new job for me but also brought along the challenge of settling back in Pakistan with my family after 10 years.

Moreover, my area of research, i.e., formal verification methods, is very theoretical and was very new to Pakistan at that time. So establishing myself as a researcher in Pakistan was not so easy as, due to non-awareness of my research area, students were not interested to work with me and getting research funding was even a far greater challenge.

From my initial days, I always dedicated half of my time to research. I remember spending three days of the week to manage my teaching and administrative duties at SEECS and dedicating three days of the week (including Saturdays) completely for my research. I personally kept on working on new research topics myself as I did not have any students at that time and rigorously applied for research grants. Despite many rejections, I kept on learning from my mistakes and refining and resubmitting the research proposals. I remember my first research grant was accepted in the HEC's NRPU program in 2010. I got some basic equipment from those funds and established my research lab. From my grant, I was also able to get a couple of paid RAs.

There was a great sentiment at that time that it is very difficult to publish in top venues from within Pakistan. I took that as a challenge and encouraged my students to submit their research work at the top venues and we were able to get acceptance from top ranked conferences and journals in our research community. It's worth noting that I got my first conference paper from the work that was done by my students here at NUST in 2011 and the first journal was published in 2014. This is very important for the new faculty members to know that initially we all face challenges, so it is normal if they are taking some time to adjust and get the required outcomes. But they have to put their best effort and all it needs to excel is perseverance and a positive mind set.

How would you like to build on the success of NUST over the past 25 years?

NUST has Masha Allah come a long way in the short duration of 25 years. Our predecessors have put in an enormous effort to set this great national level platform in the country's higher education sector. I strongly feel that my grassroot level involvement in the university's core functions of academics, research, administration, industrial outreach and internationalization, puts me in a very suitable position to steer NUST to the next level of excellence.

How would you like your position as a Pro Rector (Academics) to be viewed in two years – 5-year time? What for you would success look like?

My vision is to further enhance the experience of our students, faculty, staff, and alumni with the objective of bringing a positive transformation in our society and thus the world. In this regard, my main goals are:

- *To become an institution of choice for students and employers by introducing student-centric learning and high quality academic programs.*
- *To raise the level of research by focusing on quality rather than quantity and intriguing the quest for solving real-world problems and thus cultivating entrepreneurial culture.*
- *To foster collaborations both at the national and international level to benefit from the complementary strengths of the partners as well as to in still awareness of cultural diversity.*
- *To build the character of our students, faculty and staff by raising awareness of ethical practices and our social responsibilities and through engagement in community service.*

- *To enhance the experience of our students, faculty and staff by providing a respectful and equal opportunity environment and efficient administrative processes streamlined through the integration of technology and digitization.*
- *I would consider myself successful if I can make a positive impact towards all of the above-mentioned 5 goals.*

What priorities of immediate actions you see in your 1st Month under this position?

I am not a believer of making radical changes. My first month in the new role would mostly be spent on developing the understanding of my new role as well as establishing positive working relationship with my key team members. Higher Education decision making is all about collective wisdom and I would like my team to be comfortable in sharing their view points and having a healthy debate.

You have a decorated career as academic. How do you see the changes in the landscape of HEC in Pakistan and in composition to the developed world? What are the reasons quality being missed out in higher education sector?

We have seen quite a drastic surge in the number of impact factor publications in the Pakistani higher education sector in the last couple of decades. I think this is mainly due to the stringent number of publication requirements given in the promotion criteria. The surge in the numbers is encouraging and it has also resulted in some good quality publications as well as in enhancing our university rankings. However, in my opinion, now it's time to revise the promotion criteria and focus more on the quality and impact of research. There are various factors to measure the quality of research, including the impact factor, citation count, H-index, I-index etc. HEC has recently launched their own journal quality assessment system, i.e., HEC Journal Recognition System, which is worth exploring for consideration in the promotion criteria. Similarly, we also need to give weightage to the impact of research, which can be measured in terms of various factors, like industrial and international linkages, funding obtained, patents filed and commercialized. Besides the promotions, the quality should also be incentivized by HEC as well as the university themselves. I understand that gauging the quality is quite subjective but the developed world has integrated the quality assessment through effective peer evaluation and it can also be considered to be integrated in our system.

What will be the approach of governance for you as pro-Rector (Academics)?

NUST has a very well established academic governance system that comprises of a thought out structure with both centralized and decentralized approaches for various matters. I am planning to continue with the same governance structure while trying to bring more involvement and visibility of the faculty and stakeholders at the school level. Moreover, I feel that the timeliness of the decision making is quite important especially in these uncertain times so this is another area that I would like to work on. Finally, one of my major goals is to introduce more digitization in academic matters to facilitate the faculty, students and the officers.