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GRADUATE EMPLOYABILITY
IN THE 21st CENTURY

CONFERENCE PROCEEDINGS

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This collection of papers is the fourth of a series of annual proceedings of *the Eurasian Higher Education Leaders' Forum*. This year's Forum, held on the 11-12 of June, 2015 at Nazarbayev University, Kazakhstan has provided an international platform that gathered higher education leaders, policy makers, faculty members and students to discuss issues of graduate employability in the 21st century. The Forum and its consequent proceedings could not have been completed without invaluable contributions of our distinguished speakers and authors. Our presenters come from different professional backgrounds including higher education institutions, national business companies as well as international businesses that work closely with education stakeholders across Kazakhstan, the Central Asia region and beyond.

The success of the Forum has been due in no small part to the meticulous work of the members of the Steering Committee that greatly contributed to the development of the themes and the contents of the panel sessions.

The key themes of the 2015 Eurasian Higher Education Leaders' Forum include:

- Role of global skills in the graduate employability;
- Perceptions of employability, skills and individual aspiration in a diversifying economy;
- University-employer-community relationships;
- Role of Vocational Education and Training (VET) in career development;
- Student transitions and careers guidance.

The Forum aimed at developing an international dialogue between higher education leaders, policy makers, researchers and practitioners from different parts of the world. The quality of debate and argument has benefited from the participation of local and international delegates that have shared their expertise, insights and visions on the current situation of graduate employability from local and global perspectives. More than 500 participants from twelve countries took part in the Forum's sessions and Q&A discussions.

We hope that these conference proceedings will serve as a valuable resource for higher education leaders, faculty members and policy makers interested in the issues of employability. We invite everyone who is interested in reflecting on the continuities and changes in education development and taking strategic actions to improve their national and local educational environments.

Information about the annual Eurasian Higher Education Leaders' Forum is available on our website at www.ehelf.nu.edu.kz. This collection of papers is a project of the Nazarbayev University Graduate School of Education.

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September 2015

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PREFACE

Aida Sagintayeva and Kairat Kurakbayev

These conference proceedings represent voices of academia, students, employers and labour market on perspectives and issues of graduates' employability. As the academic world tries to grasp its ways of drawing closer ties of education systems with the real-world labour market, youth unemployment and underemployment has become common across the world especially at times of economic crisis. With 14% of OECD average of youth unemployment (August 2015) and Kazakhstan's youth unemployment rate of 4.2 % (July, 2015), we are observing more and more debates stressing education policies geared to the labour market and the importance of active labour market policies on both national and international levels.

The scene is set in the introductory and welcoming speech of the Minister of Education and Science, Dr. Aslan Sarinzhapov who provides his view on current developments of the youth employability locally and internationally. He emphasises the importance of education in the success of government reforms and nation-building in general such as the case of Kazakhstan and other former Soviet republics located in Central Asia and Eurasia. Minister Sarinzhapov notes that work and education are still generally perceived as two worlds apart. He points out challenges of building partnerships between academic institutions and the labour market and calls employers for a more constructive engagement and involvement in the development of educational programmes as one of the priorities in the national policy for higher education in Kazakhstan. Also, the Minister makes a point on the design and development of approaches and instruments for assessing new young workers' skills that should be shared commonly by education providers and employers. Indeed, to tackle the issue of youth employability, it is essential to design 'a whole-of-government strategy' for more coherent policy settings (OECD Skills Outlook 2015, 21).

The issue of partnership between education providers and employers has been discussed at Session 3 "University-Employer-Community Relationships". Matthew Hartley reminds us of a mutually beneficial relationship between the university and the employer. Shamsh Kassim-Lakha raises a point on the role of professional associations in building productive relationships between academic institutions and employers. Abdrakhman Naizabekov, in his turn, taking a case of an institution based in one of Kazakhstan' industrial town Rudny, gives us a good example of partnership between a mining company and the academic institution detailing possible ways real-world employers and practitioners could play their part at higher education institutions' academic programmes.

Employers want to hire qualified and strong specialists, as explained by Hugh Lauder (a keynote speech). They want people who are ready – graduates – people coming out of education systems who are ready to play and who are ready to work. The graduates' dilemma of meeting the employer's expectations and acquiring well-integrated work experience is one of the institutional and personal challenges that students experience as they aspire to become qualified employees. Though Professor Lauder refers to the social contexts of US and UK, the situation of having overqualified graduates doing non-graduate work is relevant to other regions of the world. For instance, in the context of Russia and the post-socialist bloc of countries, Isak Froumin raises a point that universities should not try to produce planned numbers of engineers and other specialists until they understand exactly what the labor market needs in terms of qualifications and competences.

Clearly, enabling students to achieve success in their studies and find one's calling in life should be closely intertwined with their future career aspirations. As Tim Miller, in his keynote speech, notes, careers are planned, they do not just happen. As mentioned by Yerezhap Mambetkazyev (Overview Session), there has been a concern that academic systems, apart from drawing on standardized testing, need to develop a new rational model of competent diagnostics of graduates' academic progress. Taking a stance of employer, Alper Akdeniz (a keynote speech) poses a question to the audience of "what should be considered in developing educational programmes that are fit today for tomorrow's

challenges” and presents five main mega-trends that are expected to shape the future landscape of graduate employability.

Many authors have underscored the importance of curriculum and its impact on graduate employability. Curriculum reform is one of the main challenges that academic institutions have to take into account to make their education services relevant to graduate employability. David Bridges (Session 5 “Student Transitions and Careers Guidance”) notes that good curriculum planning requires attention to four key principles of curriculum design: continuity, progression, differentiation and coherence. Seeram Ramakrishna (Session 1 “Global Skills”) provides a comprehensive view on upgrading undergraduate and graduate education from the perspective of the net generation that is characterized by the students’ preferences for blended learning, digital technology and access to worldwide comparison of universities at the programme level.

Jamilya Nurmanbetova (Session 1 – Global Skills) calls academic institutions to incorporate ‘real work’ practices in the curriculum while Arstan Gazaliyev and Yuri Pak (Session 2 “Perceptions of Employability, Skills and Individual Aspiration in a Diversifying Economy”) point out the importance of keeping a reasonable balance between theory and practice in higher education curriculum. Over-theorized educational content and lack of opportunity for students to engage with the real-world learning situations have been a major challenge in academic institutions. An issue closely related to the theory-and-practice point is the idea of labor market relevance and dual programmes that combine work and study. In Session 4 “Role of TVET in Career Development”, a timely point of increasing convergence of systems of technical and vocational education and training and the higher education sector has been raised by Sabirzhan Madeyev, Geoff Hayward and Rainer Goertz. In this context, Geoff Hayward discusses challenges of transitioning that students experience as they move from VET to Higher Education and elaborates that access to higher education remains crucial for making progress to higher paid jobs.

Rainer Goertz presents a case of how the TVET system in Germany has taken a more active role in the education an employer markets coming from a ‘supplier’ to a ‘developer’ agent for qualifications and key competences. This is very relevant to Kazakhstan where the employment rate of VET graduates comprise 36.5% as a percentage of employed population that is considered to lag behind the rate of OECD countries. Nevertheless, less than 50% of VET students and less than 40% of students in general programmes are exposed to work-based learning on average across OECD countries (OECD Skills Outlook 2015, 34).

Jamil Salmi (Session 1 “Global Skills”) makes a point that today’s graduates need more than just academic skills and refers to the 21st century skills that are supposed to help prospective graduates be internationally competitive. We must admit that not many higher education institutions manage to embed transversal skills as teamwork, collaboration and communication in their higher learning curriculum. Closely related issue is the importance of developing social and personal values that would underpin graduates’ job role and the organization they would work at in the future. This point is raised by Aida Sagintayeva who sees understanding one’s values as an essential element of one’s professional identity. Seeing a meaning in what one does may help a prospective graduate feel fulfilled and satisfied with one’s job and career in general.

The notion of choice to navigate one’s own career success has been extensively discussed at the Forum. Loretta O’Donnell (Session 3 “University-Employer-Community Relationships”) makes a strong point that given accelerating forces of technology, economic and social changes, the traditional concept of ‘career ladder’ has been replaced by a ‘career landscape’ that presents different directions and thus requires an ability to make a rational choice of one’s own career path.

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GRADUATE EMPLOYABILITY IN THE 21st CENTURY

Aslan Sarinzhipov

Introduction

Dear ladies and gentlemen! Dear friends, dear guests!

I would like to welcome you once again in Astana at Nazarbayev University at this important event and a good tradition of annual meetings of national and international experts in the field of education – *the fourth Eurasian Higher Education Leaders' Forum*. It is becoming a good platform to discuss all the recent developments in the higher education system. More and more countries and participants come here. So, this year the Forum takes place at a very important moment. As you know, Kazakhstan has recently held presidential elections. The President announced a very serious reform plan on five institutional reforms where education takes a key role. Now the government is very busy putting together Action Plan for the next five years to develop our education system. I think that the discussions at this Forum will contribute to this work and we will all be witnessing creation of a new five-year reform package that would hopefully move Kazakhstan towards top thirty most developed countries including the development in the human capital sector.

At this year's Forum, I invite you to place the primary focus of our discussion on the most pressing issue of the higher education system – employability. The theme of the Forum is "*Graduate Employability in the 21st Century*".

One of the major issues facing governments of the countries is successful crisis negotiations, employment crisis. In OECD countries, every fourth citizen aged between 16 and 29 is unemployed, they do not study in the system of education and do not do any professional training in the industry. The problems associated with the various sectors of the economy exist worldwide. A special emphasis in facing these challenges is given to education.

Education and its Role in the State Building

The education system plays a key role in the new plan of five institutional reforms of Kazakhstan, "100 Concrete Steps to Further State Building" in all the five areas of the reforms. This requires from us particular actions on improvement of all the sectors of education. This great responsibility is difficult to overestimate, since the key link of the forthcoming reforms is nothing more than human capital.

As the experience of leading countries and international development has proven, education and science should be a key factor of national development, growth in competitiveness, economic growth and social harmony. Therefore, we believe that all educational and scientific communities of the country and, of course, our Ministry needs to have a new attitude to the ideology based on the approaches and values of education and science as public goods.

These changes, which take place in the field of education today, are designed to have a positive impact on the situation in the future and should contribute significantly to the development of collaboration and partnership between academic institutions and industry. The discrepancy between the employers' expectations and the results of training specialists is a global challenge. This problem relates to both local actors and speakers from other countries. For instance, in 2013 the UK Commission for Employment and Skills surveyed about 100-thousand of the employers for the issues they face while searching for employees. The results of the recruitment procedure according to figures from the employers show that almost 3 out of 4 positions lack relevant

professionals. The reason for this is insufficiency of skilled personnel. In total, approximately twenty two percent of all jobs are just the same.

The last year's survey among Kazakh employers aimed to identify their expectations from university graduates and revealed the following. Highlighting the importance of academic achievement, the prestige of the university, graduates' commitment to updating their skills and knowledge continuously, employers showed concern about the quality of qualifications acquired at university.

What do these facts tell?

It is clear that companies cannot get around hiring recent graduates, despite the fact that the employer is not always sure that yesterday's graduates have acquired relevant education and training. Understanding this, the employer should be convinced to work more closely with academic institutions. The interaction of an academic institution and the industry has not reached the matching level of expectations at both ends. In the context of Kazakhstan, this issue is compounded by the fact that in general, despite the transition to market economy more than 20 years ago, the supply and demand both in the labor market and in the education market is still evolving. A considerable work has been done in the development of the national business. New production units emerge, new technologies are implemented, and new job positions are introduced. The labor market is developing quite rapidly. However, higher education system does not stand still. New academic programmes emerge, professional development level of teachers increases, Kazakhstani universities become more involved in international processes and initiatives. Nevertheless, there are disputes regarding what kind of an employee a graduate should be, and sometimes graduates do not meet the requirements that employers provide. Thus, until now, despite the joint efforts for the development of the labor market and the education market, this dialogue with the production encounters certain difficulties. I would like to mention that today there is a tendency to understand that although the school provides the basic knowledge and skills, further development of students' competences in their chosen major is not just a problem of the education system. The debate concerning the benefits of the interaction between industry and the university has been steadily expanding. The emphasis is laid on training on particular examples of industry, the formation of precisely those skills that are in demand by the employer.

Role of Industry Representatives and Employers in the Development of Relevant Industry Specific Qualifications Frameworks and Professional Standards

The key form of integrating industry representatives in the training of specialists is their participation in the development of the National Qualifications Framework. National Qualifications Framework is oriented to employers. Since 2012, our country has been making serious efforts for its implementation. The Labour Code introduced a special chapter, which approves National Qualifications Framework, industry specific qualifications frameworks have been developed. The subject of this Forum is dedicated to the issues of core competencies of graduates and the modern labor market. Furthermore, there are many examples in the history when educational system would take the lead in solving global problems and, one such an example is signing the Bologna Declaration by the ministers of education in the 1999. The document aimed at uniting the efforts of the ministries of education for unification of higher education systems in their countries in order to create a single labor market which would act to single documents on education and graduates would acquire almost the same level of knowledge and skills.

The engaged participation of the employers in the development of relevant industry specific qualifications frameworks and professional standards is crucial. Practical involvement of employers in the development of educational programmes is needed. Responsibility for the development

of the united approaches and tools for assessing the quality of graduates' training should be shared commonly by the representatives of both education and the labor market.

Practical collaboration with the labor market in the training of the graduate promises a lot of progress. However, even in this progressive process we should not forget the important role of high school - providing basic knowledge. This fundamental knowledge is the basis of the "lifelong" learning process.

Modern technologies are developing rapidly, and in some industries quite rapidly. No university can provide skills that would be in demand for once and forever. Therefore, appreciating the role of industry in the learning process, we should not forget that the system of fundamental knowledge acquired in the university is critical for self-regulated learning, mastering skills independently and the ability to invent new ideas in the production technology. The main challenge for the education system in our rapidly changing world is the necessity to form the ability and motivation to learn independently and lifelong professional development.

Coming back to the key theme of this gathering, I would like to emphasize that industry provision with qualified specialists as well as efficient investment fully depends on the quality forecast in personnel needs in the long-term perspective. However, even the existence of a clear forecast does not guarantee to meet the needs of the labor market. The state recently introduced the relevant regulations regarding the need for the graduates of pedagogical and medical specialties that received state academic grants to work at least for three years. The issue on the introduction of such a requirement for all the students that got a place at university due to the state grant has been raised. This measure to some extent may contribute to the consolidation of young professionals in their field.

Recent changes that have been introduced in the education system include the establishment of the institute of corporate governance, consolidation of the efforts of all stakeholders through the establishment of supervisory boards, boards of trustees, the policy of integration of academia and research, integration of education with industry to train qualified staff able to meet the requirements of the rapidly changing market. We are standing on the threshold of major reforms that I am sure will lead our country to the most developed countries of the world, including the development of human capital, in accordance with the tasks set by the Head of the State. I think that our Forum, our discussion will also contribute to this case. In this regard, I would like to wish all participants of the Forum fruitful work, interesting discussions and positive outcomes!

THE FUTURE OF GRADUATES IN THE GLOBAL LABOUR MARKET

Hugh Lauder

Dear Minister, colleagues and distinguished guests!

Thank you very much for inviting me to give this keynote this morning in these challenging circumstances that we face. Let me also say that it is rare that I have had a Minister of Education with whom I have agreed so wholeheartedly as in this particular case. I think the message here is one, which is actually very pertinent to what I have to say. I would also like to say that this university, I understand, is meant to be a model for the practices of higher educational institutions in this country. I think this particular conference is a model for the rest of the world as well. I have not been to a conference where I have seen the combination of academics, employers and those people who are trying to bring the two together – practitioners in that sense, but in a conference of this size and with so many guest speakers. I thank you very much for inviting me along for this conversation. The message I have to give today is one, which I hope, will set out the challenge and I shall overemphasize it, that means that I shall be polemical and I hope it will provoke some discussion.

Let me say before I begin – some of the headline points I want to make. The first is that the fundamental problem we have across the globe now in terms of skills and graduate labour is not skills. It is jobs. There simply are not enough jobs for graduates across the world. There has been a doubling of graduates in the world. We have now more graduates than we have ever had in history. I shall document from the data for the United States and Great Britain, there are exceptions which I will talk about, but as I will document, there are fundamental problems for the graduate labour markets in these countries. That in its turn is causing problems: as graduates are doing sub-graduate work so they are pushing the less skilled out of the labour market or down the labour market. It is called bumping down. These are the fundamental problems that we have to confront. But I am not going to be all pessimistic about this. There are ways in which we can address these issues. I shall come back to those at the end. I shall ask you a question and if you can answer it then you will be two thirds on the way through getting to a solution or at least addressing some of the problems.

So why then are we in this situation, whereby the fundamental problem is about jobs not skills? There are two sides to this. The first is that I want to look at is the global labour market and skills. Then I want to look at why it is that employers consistently tell us those skills, the ones that education produces, are not the right skills. I want to look at the structural factors behind this as well because we cannot simply take it, that this is the case; we have to see what lies behind this. In order to understand the nature of higher-level skills, graduate level skills in the world, I want to refer to the work that I have done with my colleague Phillip Brown in 2011. We published a book called *“The Global Auction”*. This is the global auction for jobs and we talked about it provocatively as the broken promises of education, jobs and income. Why is this? I will give an example story. The first interview we did was with a major German multinational engineering company in Southern Germany. I am sure it is present in this country as well. We talked to their director of HR and my question to him was, “Do you have a shortage of engineers?” I was expecting him to say “Yes” and he said “No”. I said, “Do you get them from Germany?” And he said “No”. I said, “Do you get them from the United Kingdom?” And he said “No”. You can see where my thinking in 2005 was. It was in Europe and then America because my next question was, “Do you get them from America?” He said “No”. I was getting frustrated. So I said, “Where do you get them from?” And he said, “We get them from China, we get them from India, we get them from Russia. Mathematicians and IT specialists from Bulgaria because during the Soviet Union Bulgaria was regarded as an IT specialist country.” And, all of a sudden, in that sentence he opened up a completely new vision to me of the way in which multinationals thought about sourcing labour, global labour. In that sense, what that meant was that instead of looking at

the multinationals in Germany, Britain or the United States, we were on airplanes and we were going to Korea, we were going to China, we were going to Singapore, to India. These are the countries in the study that we undertook. And the message was consistently the same with a few exceptions. The message was, "We source our labour at the cheapest possible price". It is fundamentally the first rule. It is not always the case, there are clear exceptions but, nevertheless, this is the general rule.

That is a part of the problem but it is only a part of the problem because the other part of this problem is that digital technologies are moving up the skills chain very rapidly – many of these digital technologies are moving up and taking over the work of the graduates and we have examples of that. Bank managers are very good examples of that if you reflect upon the practices of your own banks. Very often, you do not even see a bank manager these days. It is straight through banking, as they call it, through the technology. There is this kind of problem of demand for skilled labour. Not in all places. Germany, for example, has right now a shortage of roughly eight thousand of engineers at a PhD level. In some countries there is a skill but, that is a function of the nature of the industries and the skills demanded by these industries. In that case, we need to look at country by country despite this general global trend that I have been describing.

Let me now come to the employers. Why is it that employers in the past complained but not that much about the level of skills in the country? Why now? Well, I think there are a number of reasons. The first is that they are under enormous competitive pressure. With that enormous competitive pressure, the expense of time and training is something that they would rather not commit to: what they want is workers to plug and play. They want people who are ready – graduates – people coming out of education systems who are ready to play and who are ready to work. And this is often as the Minister suggested not an easy thing to do to put those things together especially since technologies and changing job structures are moving so fast that it is very difficult to plug in and play. Hence, there will always be some kind of friction between these particular sectors. There are exceptions. You will not find this problem in engineering. You will not find this is a problem in the health sector. But in many of the sectors it is the case.

Now let me talk a little bit about graduates. We all used to believe and ministers of education in my own country I think still believe that graduates will always do better than non-graduates in the labour market. The OECD believes it. It is correct but it is misleading. It is correct because graduates are now doing non-graduate work. Around 50% of graduates in the United States and the United Kingdom are doing non-graduate work. Let me give you a shocking figure: predictions by the Institute for Employment Research at Warwick University suggest that by 2020 around 30% in the bottom decile or a bottom group in terms of income in the United Kingdom will be graduates. The movement down the graduates and the lack of opportunities is increasing dramatically and it is really important that we try to engage with this particular issue wherever we are. Here is the problem.

Another problem when you actually disaggregate the data for graduate incomes, what you see is that they overlap with non-graduate incomes now because of the reasons I have just given, and what you see is a wide disparity in graduate incomes. Those in the 90th percentile, right at the top, those people do brilliantly. They absolutely take off in their careers in terms of their earnings. This is what multinationals call the talented. They are the people for whom the top jobs are allocated. They fish in very small university pools to get those people. Typically, they will go for the top four universities in a country to gain these people. This does not matter whether this happens in China, America or the United Kingdom. Again Germany is an exception because it has many research universities of equal standing and they recruit from across the board for them. But in other countries that is not the case. These people, who are talent, defined as talent, are given the Earth. But for that talent they have to be multilingual, multicultural and they have to have those soft skills, the things that we know so well: team work, communication and all

these sorts of things. It is simply assumed that they have the technical skills. This is not an issue of technical skills but these other skills. They are the people at the top and everyone else has to struggle beneath them that is the knowledge economy structure, only it is not a knowledge economy of course, it is a knowledge capitalism, it is a very different place to the imaginary of the OECD and my own education minister. Many will be stratified into routinized work. There will be people in the middle between who are talented – those who have permission to think and those who do the routinized knowledge work. This is the stratification of knowledge. My question then when I come to the end of this very short piece is this. How do we deal with this problem? It is a fundamental problem. How do we deal with it?

It will be different in different countries and we know that. It will depend on their educational systems and their industrial structure. But how we deal with this? Here is the question. I was in Singapore talking to 150 policy makers at the Singapore Management University. They wanted to know about this global auction stuff so I was telling them with my colleague Phil Brown. I turned to the audience and I said, “You, guys are really hooked on benchmarking, you guys are really hooked up on league tables. So, I asked you tell me which country in the world is most successful economically and at that stage only had one university in the top one hundred of the various global league tables”. They looked at me. They looked at each other and they found it very difficult to understand. I think they thought I was having a laugh but, of course, I was not having a laugh at all because the answer is Germany. Germany should then tell us something important perhaps. It is this. How is it possible that multinational companies from Germany can dominate in their particular sectors in the world? The source of their knowledge and their research, not so much anymore because it now spans across the world, but the original source of that knowledge came from their local universities. It was the local universities working with those companies that generated the technologies that drive your Audis, BMWs, Mercedeses and so forth. It seems to me that if you keep your eye on the league tables, you may well go wrong because I can ask you an alternative question. Which is the country, which has many universities in the top one hundred and is an economy in decline? The answer is of course, Britain.

What I think has become absolutely clear over the past twenty years is this. If you leave everything to the market, you will have a very large low skills sector in the workforce. It does not matter whether it is the United Kingdom or the United States and I have to say there is in Germany as well, but in the service sector there. If you have that large low skills, low wage sector, then how do you then address the issue I have raised previously about raising the demand for graduate work when so many are moving now into this low skilled sector, hugely overqualified. I think the only way we can do this is through industrial policies. If you look at the most successful countries economically – Korea, Singapore – outstanding, China, Germany, Brazil – you see they all have industrial policies of one sort or another. There is no template for this. You have to be smart and deal with your local circumstances in your trading position in the world. You cannot simply do it by saying, “This is the way we do it, and we do it”. It is difficult. It hard. You will fail. You will fail and then you will succeed. Just as you have market failures, then clearly you can have industrial policy failures. The lesson is unless we start to really think through how we can raise the demand for skills in our countries; we are going to have large numbers of young people who are unemployed or deeply discontented because they are doing work for which they are educated. That is a challenge for us in this conference from my perspective. I hope it has been challenging and I hope it engages in some conversation, some controversy. Thank you very much indeed.

FROM A COMPETITIVE EDUCATION TO THE PROSPERITY OF THE NATION

Yerezhep Mambetkazyev

Dear colleagues and guests, first of all, let me express my gratitude to the organizing committee for allowing me to present my ideas to you!

In his national address “Nurly Zhol”, President Nursultan Nazarbayev reiterated the need to achieve the quality of education that can affect the whole future destiny of the country. Undoubtedly, over the years of independence, higher school has adapted to the demands of the century. A striking example of this is Nazarbayev University, National Universities and competitive private universities that represent progressive tendencies. These achievements is a considerable merit of my colleagues, talented rector, worthy of respect of the whole society. The status of rector could actually be equaled to that of member of parliament and requires an adequate attitude. In the hands of the rector is the future of the country.

It is symbolic that Minister Aslan Sarinzhapov, now as the head of the new format, who obtained a brilliant education, has a good command of foreign languages, organically fit into the new system. So the further development is the task of education leaders and administrators. It is our personal and civil responsibility. Surely, we have many achievements. But there are still many problems. Having thirty years of experience of working as a rector, I consider to have a right to make some observations.

First, training without the regard for the demands of the labor market leaves about 25% of each year graduates unemployed. I propose to return to the already proven experience: establishment of large regional innovative state universities in each region by merging universities, which will eliminate duplication of majors.

Second, the imbalance between budget-based and tuition-based places at leading universities dramatically reduces the quality. No wonder employers are discouraged by the skill level of graduates. We cannot allow the rapid growth of fee-paid education to further increase the “educated” unemployment.

Another way to quality is the selectiveness of higher education. The analysis shows that only 30% of high school graduates are actually prepared for college and university programmes. The rest should be directed to vocational education colleges. In this regard, the responsibility of the secondary school is growing immeasurably. Today it needs a new rational model of timely and competent diagnostics of the student’s academic achievements.

In this context it would be logical to introduce annual testing of high school students in all school subjects. Upon graduation the final average grade, combined with the results of national testing will provide the maximum objective assessment of each student’s knowledge. There will be no “cramming” in a few selective subjects. Universities will receive a career-focused entrant. Following the national testing it may also be necessary to conduct profile interviews at the university by the leading faculty staff.

Third, universities traditionally focus more on providing theoretical knowledge at the expense of the practical element of education. A solution to this is reduction in the share of general education subjects. The students also do not obtain sufficient skills for the chosen profession. The university and the employers are still worlds apart. The share of the involvement of the employers does not exceed 1%, while in developed countries this number is about 30%. Hence, coordination is needed at national level.

Fourth, the quality of state standards. We should significantly reduce the share of general subjects, placing them in the programme of secondary schools and colleges. Then, more time will be left for special subjects, achieving professionalism in the walls of the university.

Fifth, urgent, universities are not providing measures to encourage and motivate the teachers (high teaching load, low wages, excessive and time-consuming paperwork, no time for professional development). I will say more: we do not support even the famous Kazakh scientists who have received, in due time, their education in prestigious universities in Moscow, Leningrad, and younger generation - in the best foreign universities. But we manage to forbid them to work at several universities at the same time. We do not invite them to guest-lecture for decent honorariums at leading universities. But internationally it is a sign of special respect for eminent specialists. I hope the problem will be solved at the level of the Ministry.

Sixth, an innovative economy needs highly qualified personnel. However, the number of state grants for the preparation of PhDs is too low and unevenly distributed (there are more grants for universities in the capital and large cities). I propose to annually allocate grants among competitive universities, including providing private universities that already have had successful defense of doctoral dissertations with admission quota for a fee-based Ph.D programmes. It can be established by the Ministry on the basis of petitions from regional Akimat in accordance with the requests of the enterprises in the region. Those enterprises take responsibility for paying tuition for the students.

Another important point, the twenty-first century with its advanced technologies, mainly in English, amplified the importance of multilingualism. The Kazakh-American Free University (KAFU), the university of international partnership with the US, was one of the first, along with KIMEP, to predict this need well ahead of time. We started with undergraduate programmes while KIMEP with masters programmes. In the twenty years of its history, KAFU has trained more than four thousand of competitive specialists with knowledge of the English language. Our graduates are in demand virtually around the entire civilized world. According to the Ministry in 2014 KAFU took the 4th place out of 130 universities in the country in the rate of employment of graduates. Having an experience in multilingual education, we propose to host a special round-table discussion at KAFU with participation of the Minister, the rectors of leading universities and foreign partners.

Dear colleagues!

Do not misunderstand me: all these considerations are dictated by my responsibility of the rector and a citizen of the society. A more detailed discussion of these issues is presented in my recent monograph "Rector - the Conscience of the University", published in 3 languages in Kazakhstan and America. The book presentation was held on the initiative of the National Library in cooperation with the Almaty Bureau of the Press Service of the President and the Academy of Journalism of Kazakhstan, and in March of this year it was also presented in Portland, Oregon, in the US.

Finally, I am sure that by not just following the foreign models but also by maintaining national priorities, we can create a Kazakhstan university model. A good example of such process is Singapore and Malaysia. You would agree with me that if we do not evaluate our problems from hard critical positions now, it might be too late tomorrow.

CAREER PLANNING FOR FUTURE OPPORTUNITIES

Tim Miller

On behalf of Tengizchevroil, I congratulate the forum organizers. This is an important gathering and I am pleased to see so many people in attendance. On educational matters, I often find myself speaking with students and employees looking for career advice. The advice I provide is generally as follows:

- Your future deserves careful thought and planning – seek advice;
- A good education is the cornerstone of success; and
- Work hard, both in school and on the job.

The reason my first piece of guidance is to plan your career and seek advice is because that is what worked for me. When I was in high school and thinking about what I would like to do one day, I thought it would be great to be an architect. I thought it would be fascinating to design buildings such as the amazing architecture here in Astana – buildings that would stand for many decades and that millions of people talk about. I spoke to a trusted teacher at school and he asked me to do one very important thing – research the job market for architects. What I found out caused me to change my direction and is the reason I am here today.

My research showed that there were more architects graduating from architectural schools than there were jobs. Furthermore, most architects did not get to design the grand structures such as the Baiterek Tower, the KazMunaiGaz building or any of the other magnificent buildings in Astana. In fact, most architects, at least in the United States where I am from, design kitchens, make alterations to existing buildings, or advise on the restoration and conservation of old properties. Now this is important work, and it can be satisfying work, but it was not for me.

After additional research I decided that pursuing a degree in engineering would provide more opportunities with more variety and would pay better. It may even enable me to see more of the world that I wanted to explore. So after figuring out what I wanted to study, I then decided to investigate what main industries I could enter such as aeronautics, civil construction or the energy business. As a result, I became an engineer in the energy industry and here I am today.

Now let me tell you about my son's path. He went to university to study mass communications and public relations. When he graduated, he was unable to find a good paying job in his field of study. After doing a series of interesting and odd jobs, he decided that he needed to find a new path. After some research, he decided to return to university to pursue a degree in computer science.

In both situations, and although the research phase happened at different points, we both decided that careers are planned, they don't just happen. But planning is only one part of achieving a satisfying career.

A good education is critical if a person is to have any chance at achieving their full potential. At TCO, we have achieved significant success since we were established in 1993. That success is due to the efforts of our workforce. And the reason they have helped TCO meet its objectives is because they are among the best educated and hardest-working professionals in the industry.

To continue to achieve our objectives, TCO intends to continue to hire the best and the brightest for its most critical positions. And while a strong educational background is critical, it is also important for a prospective employee to be able to demonstrate more than the fact that they are knowledgeable about a subject. They also need strong analytical skills, the ability to adapt to a rapidly changing environment by understanding when it is necessary to apply established procedures and when it is time to innovate.

In TCO, we believe that every member of the workforce is a leader. We are all expected to demonstrate leadership abilities relevant to our respective positions.

TCO developed a leadership competency model that defines the leadership skills and behaviors expected of employees at various stages of career development. The model emphasizes the importance of achieving superior results in the right way, of taking accountability for your actions and decisions and encourages employees to demonstrate leadership behaviors that will encourage success.

TCO invests in its workforce so it can achieve its mission and vision. A workforce that is continuously being trained in the latest processes and systems, on the use of the latest technologies and is receiving ongoing educational training is a workforce that will help ensure a companies continued success. TCO believes that it is vital that we invest in our Kazakhstani workforce in particular.

Today, Kazakhstani citizens comprise 86 percent of the general TCO workforce and hold 74 percent of the managerial and senior supervisory positions. We have almost 90 employees on temporary international assignments and have created a special programme to develop the technical skills of employees working in operations groups. In addition, we actively cooperate with Nazarbayev University by sending future managers to the Executive MBA Programme.

Our main recruitment activities take place on the campuses of universities and technical colleges throughout Kazakhstan. TCO's job fairs have become an effective tool for finding talented prospective employees. For example, in 2014, TCO recruited 76 people through job fairs, including 29 graduates of the Bolashak Presidential Scholarship Programme.

In conclusion, I would like to commend you – the leaders in higher education – for everything you do to prepare the students of Kazakhstan's universities and colleges for the workforce. It is up to the student to plan a career path, to decide what education will help him or her best achieve their objective and to work hard both in and outside of school. However, it is you who helps ensure that students are receiving the best education possible; you who work with industry to identify the career opportunities of tomorrow; and you who ensure that great universities such as Nazarbayev University strengthen the minds and spirits of the leaders of tomorrow.

In closing, I thank you for the opportunity to speak with you today and to learn about the issues being dealt with by the higher education leaders. Tengizchevroil looks forward to continuing to work with you and I wish you all a most prosperous forum and much personal success.

THE PARADOX OF EMERGING UNIVERSITIES

Simon Jones

Knowledge industries are a significant element of 21st Century economies. Over the last 25 years, Universities, the original knowledge industry, have become increasingly important engines of growth and indeed economic enterprises in their own right (National Governors Association, 2001; Ysuf & Nabeshima, 2007; Lane & Johnstone 2012; Shaw, 2013; Breznitz, 2014). Many countries are trying to restructure and re-invigorate their higher education sector in order to ensure pertinence, wealth creation and social cohesion. As we move further into the Asian Century (ADB, 2011; Blumenthal et al, 2015) the understanding that improvements in the higher educational system facilitates economic growth (Jayasuriya, 2012; Lane, 2014; Boys, 2014) has resulted in a wide range of new university models being implemented (Yang, 2014; Arab News, 2015).

These universities vary widely in form, content, and context; some emulating directly established models and others emboldened to create distinctive models which reflect the regional imperative (Haynie, 2015; Kamel & Kazi, 2015). As a result there has been marked growth in the number of new universities especially in the MENA, Central and Southern Asia regions (Havergal, 2015; Plackett, 2015). These universities, at least in the initial stages, are largely staffed and led by expatriates. Often they are from the English speaking world and encompass a mixture of first-time expatriates, the wider diaspora, and self-declared citizens of the world. The challenge such institutions face is building a real system out of the imaginations of many different stakeholders. Universities, like many knowledge industries require bricks and mortar but it is the ethos, insights, and impact of the individuals who inhabit these spaces that produce value.

This contribution reports on the experiences of building *ab initio* Nazarbayev University, a 5-year old research university in Central Asia (NU, 2015). Like many new universities, it has a largely expatriate faculty and a largely local non-academic workforce. The development of such an institution requires the leadership team of the institution to understand the dynamics and efficiencies of such a cross-cultural workplace in order to meet its goals.

After outlining the institution, the following sections address four specific examples of where the cross-cultural interactions impact the building of the organization and when and how the leadership of this largely expatriate faculty needs to take action. Finally some tentative conclusions about the nature of expatriate leadership in knowledge-intensive enterprises are made.

The Case Study: Nazarbayev University, Astana, Kazakhstan

The Republic of Kazakhstan is almost 25 years old. One of the *Commonwealth of Independent States* (CIS) formed when the former Soviet Union dissolved in 1991, it has a large land mass (the 9th largest country in the world) and a population of around 18 million (CIA, 2015; KZ Embassy in US, 2015). Its main economic activity is based around oil, minerals, and agriculture. It is considered an upper-middle income country. By the standards of the region, it has managed the transition from a collectivist economy well and is peaceful and productive (Aitzhanova, Katsu, Linn, & Yezhov, 2014). The Kazakhstani 2050 Strategic Development Plan (Nazarbayev, 2012) has education, research and innovation as key elements. The reform of the education system is an important aspect of that (Ministry of Education and Science, 2011) and the creation of a new model university as an exemplar of best practice is one of the ways this will be delivered.

Nazarbayev University aims to create a research university in Central Asia fit for the challenges of the 21st Century (NU, 2015). It incorporates a University, Science Park, Innovation Hub, and closely-integrated national research centres. It is based on the concept of partnership; in this case involving 6 of the top 30 universities in the world. Each partner is aligned with one of the

Schools of the University and the institution is broadly but not exclusively focused on STEM-based subjects and the professions (NU, 2015).

The partnership model allows each school to have access to outstanding support within their domain area. Typically partners in the initial stages provide comprehensive support including visiting faculty, curricula, graduate students admission, and faculty recruitment advice. Over a period of about three years this evolves in such a way that the University partner develops into an equal in the relationship rather than as a service provider. This partnership model is intrinsic to the project of building a new university in the Republic of Kazakhstan. We did not wish to create an overseas branch of a campus nor did we believe the academic city model such as found in Qatar (Kumon, 2014; Neil, 2015; TAMU, 2015) to be right for Kazakhstan. The goal was and is to create an in-country capability shaped by the needs of the nation and a lasting part of the on-going transformation of Kazakhstan's economy and society.

Wealth creation, knowledge generation, and education are given equal importance in the model. The bulk of the funding in the early stages comes from central government but over the longer term, it is anticipated that costs will be met broadly by an equal mixture of fees, endowment income, and research work.

Nazarbayev University is an aspirational institution. It admits 9% of those who apply and commits over a hundred million dollars a year in research projects and infrastructure. In 2015 the University has 3 large schools and 4, smaller, graduate-only schools. The University currently offers 16 majors, 15 master's programmes, 2 PhD programmes, and 1 MD programme. All this has been put in place by the local staff together with 229 Faculty, 7 Deans, and 2 Vice-Provosts recruited over the last three years from around the world. It now has approximately 3000 students and graduated the first cohort in June 2015.

Nazarbayev University is uniquely independent of the Ministry of Education and Science of the Republic of Kazakhstan. Authorized by an act of the Kazakhstan Majilis, it has independent authority to award degrees. Its charter is remarkably similar to many western institutions, with a high board, a supervisory board, and a guarantee of institutional autonomy (NU, 2015). The University Charter has created Academic and Research Councils. These are faculty-led top-level bodies with powers to define and approve the university research and education missions. They provide a best-practice and unique in Kazakhstan model that balances the academic and executive governance of the institution. They also guarantee the relevance and independence of our teaching and research. Governance as defined by the charter is similar to that of a typical North American University with faculty involvement and separation of powers among the President and Provost.

The Cross-Cultural Perspective

This contribution adopts a practitioner view of the implications and challenges of cross-cultural leadership. It tries to articulate these issues and challenges by highlighting four specific examples which are germane to new institutions and where a mixture of policy, HR, academic needs, and local requirements all intermix. Each example is introduced within the context of Nazarbayev University and the challenges facing its employees.

An Example: Tacit Assumptions

Higher education institutions like many other organizations in the creative and knowledge sectors, operate on a vast array of tacit assumptions that 'everybody knows' and therefore nobody needs to communicate (Trowler, 2008). These are built up over a long period and sometimes reflect the stability of their mission and the certainty of their purpose. For example, Oxford University was up and running long before the Aztec Empire was established.

They operate in a devolved manner, where practitioners or 'creatives' are permitted significant autonomy in what they do and how they do it. Merit is recognized by peer review and change

managed by a sometimes lengthy process of reaching consensus. It is all worked very well where time, tradition, and institutional culture has permitted it. Also such institutions are selective and it is often highly-competitive to obtain a faculty position there. As a consequence, they tend to admit those with a track record of effective working and a high level of alignment with their own tacit assumptions. New universities in emerging economies are less able to do this.

What about new institutions and indeed those in regions where those traditions either never existed or where they are quite different? Cardinal Newman's (in Newman Reader, 2001; Mongrain, 2013) vision of a university of self-governing scholars doesn't play well in a region where population is hungry for knowledge, where private and public sector requires systematic reform, and where the expectations for research are for going from zero to hero in less than a generation. It's too slow, too solipsistic, too expensive, and just too obscure for the rapidly expanding economies of the east and the south.

New universities need new models and new management. Emerging institutions in emerging regions need models of culture, values, and expectations that are articulated more explicitly than elsewhere and a leadership structure capable of implementing it. A frequently made mistake is to assume that transplanting an American or European model will succeed because it has succeeded elsewhere (Salmi, 2010). People involved in transplantation surgery will tell you the problem is not the donated organ: that's usually been chosen because it is healthy and strong. The challenge is in managing the recipients' response and the tendency of its own immune system to reject the graft. This analogy seems applicable to higher education.

Without being explicit about institutions' values, chaos can arise even when the individuals involved have an outstanding track record elsewhere. Entropy increases because tacit assumptions are not mutual, hence suddenly people are vexed by other's behavior and unless clear intervention occurs, in the worst cases it can turn into something resembling *Lord of the Flies* (Golding, 1954) with Ph.D's. So one of the ways of addressing this is by being explicit about the values of an institution right at the start and taking more time than one might imagine necessary to repeat and reinforce those values through individual, collective, and administrative words and deeds.

Of course the first thing is to define those values. Surprisingly, in many other areas such as collegiality, excellence, and inclusivity, a new university with culturally diverse, multinational faculty will have at first sight few shared tacit assumptions. For example, and perhaps reflecting the author's role, age and cultural background, civility seems a natural tacit assumption. If you have worked at an uncivil organization you will readily appreciate it. However, it's not universally accepted; the American Association of University Professors (AAUP) considers civility as incompatible with academic freedom (AAUP, n.d.; Euben, 2002; Thorne, 2013). This seems a good example of the gap in mutual understanding that can be faced. One might be tempted at this point to throw ones hands up in exasperation and tackle something less Sisyphean but perseverance can pay off. Working in groups with people will get you to see that it is not the values themselves that are askance so much as the motivation for those values and the way they are articulated. It is slow work but careful debate and dialogue can steadily take you to a place where a new institution can state with clarity, 'this is who we are and this is what we believe in'.

Without talking this talk, institutions constantly stumble over themselves as beliefs and the expression of those beliefs continue to be misunderstood. It is a conversation that has to be had, yet too often we skip over it in the rush to lead expatriate-intensive organizations. The Nazarbayev University experience has been the dynamic between three different constituencies. Each of them valid and at the start at least, each of them adhering to their own perspective.

The first is the western model of universities as being autonomous bodies of scholars and that if you give scholars freedom, then the maximum utility will be derived. The second is the Kazakhstani model of universities being centrally organized and the education ministry having close control over the academic delivery. Furthermore, as context, in the former USSR, which

defines the heritage of the local Kazakhstani higher education system, universities teach: they do not research. So the linkage of research and teaching is both new and challenging. In an attempt to address this, a suitable first step some institutions are considering the co-location of research centres and academic schools on the same campus. The third perspective is of the leadership of the university who are there to represent the government's interest. An institution such as Nazarbayev University is a symbol and source of national pride.

Indeed, travelling through the regions, I am humbled by the trust and faith local populations have in my colleagues to deliver something of pride and value. It is expressed regularly and unabashedly. The university leadership perspective is to ensure political and consequential financial support for the institution by being responsive to the needs of the government and civil authority. This perspective can often result in mission creep, sudden changes, and unexpected intervention at multiple levels.

It is little surprise then that these beliefs interact with each other in both productive and less-productive ways. For example, there is a view that faculty should do research within a research centre and subject to the organizational constraints of that centre. Most typically this would include the centre selecting the project. That is an unusual approach for some faculty. Another example would be the desire of faculty to work with faculty from other universities without obtaining the endorsement of the leadership of the institution.

However there are also extraordinarily positive, not always serendipitous events. One example of this is the way in which research in the university can be directly communicated to senior governmental leaders and approval for further work very rapidly reached. All these examples constantly test the tacit assumptions that faculty, administration, and leadership have. The better organizations trust to the skills and flexibility of their people to deal with this. The best explicitly acknowledge these issues and actively manage it.

An Example: Academic Freedom

Academic freedom is a topic regularly discussed by faculty at universities. It is a term that is used loosely and is sometimes meant whatever it is convenient to mean. Given its importance to successful universities, this section contextualizes the way in which academic freedom is articulated by expatriate faculty and the ways in which it is of most utility to the wider stakeholders of a university.

Academic freedom as defined in the 19th Century Newman-ian, Humboldt-ian, or US-led liberal arts models (Rothblatt, 1997; Anderson, 2006), namely a notional, arguably mythical University is in practice a culturally defined concept. This means that the unthinking application of this at best partial, transitory and at worst mythical model to nascent institutions in very different regions can easily be misconstrued.

For newly emergent institutions in rapidly developing regions, the notion of academic freedom needs to be explored in a more nuanced way if it is to provide the bulwark and lodestone of excellence as it can often do in more settled circumstances. Institutions and especially their faculty representatives can bind themselves in lengthy debate on this topic but fundamentally academic freedom in the 21st Century is better understood in its original incarnation (Menand, 1996; Nelson, 2010) as the ability of an institution to chart its own course without undue influence from outside bodies. Like it or not that's the academic freedom most pertinent to emerging institutions.

Whether a university has academic freedom or not is a topic regularly brought up in faculty-administration debate. It is true in both settled and emerging universities there may always be the case that at the outer edges of scholarship and pedagogy, there may be constraints on approaches that can be taken and topics that are difficult to teach or study. This is always a topic of intense debate and individuals will legitimately adopt different positions depending on their

background and role. In practice, the complications occur when those who perhaps have elevated the position above its utility argue that since one topic cannot be explored therefore academic freedom does not exist. It is an argument that is at best puerile and at worst corrosive. To use an analogy you have the freedom to cough but you do not have the freedom to cough in my face. I would argue it is pertinent to focus on what can be addressed and the utility it permits.

When expatriate scholars talk of academic freedom, they sometimes bundle together two distinct concepts. The first is the notion that researchers should be able to address any topic they like without fear or favor (but with adequate funding). The second is faculty governance. This undoubtedly works well for the elite universities of the world where top-class researchers and outstanding students work in a resource-rich and mission-sympathetic environment. Less selective, more nascent institutions may experience different outcomes.

Most universities are by definition not elite. New universities in developing countries are especially dissimilar from the top 40 world-ranked institutions. It is difficult to persuade funders of the proposition that scarce research money, in a country with so many other pressing needs, should be spent on expatriate researchers who are perceived of uncertain fealty and insufficiently aware of the needs of the country. Research agendas will be tightly defined and the institution will be expected to comply with this framework. In addition it is certainly possible that the cultural and or religious context defines boundaries of debate and challenge.

The second element of this unbundled academic freedom is faculty governance. It is important. It is so important it needs to be implemented systematically through the structures and processes of every institution. The question then is given very different institutions, in very different circumstances, and at very different stages of development does a single size fit all? The answer to this rhetorical question is No. A well-established institution rich in tacit assumptions, settled in its operation and with a regular and incremental pattern of development is quite different from an 18-month institution yet to graduate its first students and only half its schools operating (as was, for example, Nazarbayev University in 2012). The balance between the consultative, the executive, and the participatory elements of faculty governance clearly needs to reflect this.

Academic freedom is undoubtedly advantageous. The challenge that expatriate leaders have is to frame the abstract notion within a specific context to permit free thinking and doing in a new and still evolving University and region. This freedom has to acknowledge the investment the host country has made, the pride with which the citizens of the nation have in such a bold endeavor, and the hope that through the creation of new knowledge, economic growth will result, employment opportunities found and prosperity generated. Those are the freedoms the host nation is seeking.

An Example: Administrative Misconceptions

It is not unusual, indeed sometimes expected, that in new institutions administrative procedures do not go smoothly. This is compounded by the fact that in expatriate institutions the employer plays a larger role in the housing, childcare, healthcare, and travel arrangements for faculty. Such issues can matter a lot to individuals especially when in a novel environment. So when it does go wrong, people feel upset, insecure, and sometimes angry. In a contemporary western-environment people are expected to acknowledge their own mistakes, apologize, and learn from them.

The act of apologizing usually brings the matter to an end in western cultures. In contrast, in Central and Southern Asia where there is a culture of 'face' (Drake, n.d.; Kim & Cohen, 2010) it is hugely painful and embarrassing for people to lose face by apologizing and they can sometimes go to lengths to avoid this. Furthermore, in such parts of the world there often exists a formal bureaucracy and a member of staff who has to apologize may have disciplinary sanctions or a financial penalty against him or her as a result. So for both practical and emotional reasons an apology is avoided.

It is possible to see an illuminating sequence with an expatriate member of faculty, more and more intensely seeking a specific apology and the (usually more junior and likely less well paid) staff member evading this with increasing anxiety. One does not realize that an apology can end the matter and the other that an apology can imply much more to the apologizer than temporary embarrassment. It's a dance you may see repeated time and time again.

Part of the leadership response is the well-established recognition that a multi-cultural environment should be flexible, tolerant of ambiguity, and not over-reacting. That's certainly a right thing to do as it will mitigate the effects. There is a bigger challenge beyond this, however. Many international companies prepare their staff for expatriate employment well in advance before the start of the contract. The initial cross-cultural talks from HR and others deal with the issue from a practical first day perspective (Chew, 2004; Vance & Paik, 2015). In some organizations, including universities, it tends to end there. What is needed to see the task of adjustment as an on-going one and a central part of the employees' duties and responsibilities. Regular workshops will help; buddying with local employees will help. However for this to succeed the individual employees need to be personally accountable for this as an integral part of their duties and in their continuing professional development. Consequentially their competencies in inter-cultural conflict resolution may need to be appraised in terms of their progress for example through the annual performance review. Many institutions are some way from this today.

An Example: Organizational Development

Faculty at a university have 3 types of duties: teaching, research and service. Teaching and research activities usually are similar to faculty member's prior experiences. At Nazarbayev University we expect faculty to spend some 20% of their time providing service so it is a not a minor component of their responsibilities. Moreover, service in a new university involves contributing to the management or development of the institution's administrative activities. Given the nascence of the institution the balance of activity is towards organizational development not administering any existing system or process.

The faculty of Nazarbayev University originates from 43 different countries as indicated by their current passport. While some represent the regional diaspora of the last 20 years, the bulk of the faculty have been trained in established universities based on the traditional western model. Furthermore, as is common with new universities in developing regions, the faculty tend to be at the start or end of their career. Independent of background or longevity the unifying characteristic of our faculty is that the bulk of them come from time-honored universities that have long established their tacit and implicit values and exist in a society with a reasonably settled view as to what higher education should be like and look like. As a consequence, few of them have any experience in building an institution *ab initio* and consequentially lack insight to do so. Furthermore not all are equally inspired to do so. This sets the scene for a particular organizational dynamic.

The dynamic commences with the legitimate request for a faculty governance model. To this is added the circumstance that there is often insufficient administrative capacity during the start-up phase. As a result faculty, sometimes even the most junior, need to undertake service that involves designing and implement core administrative processes of the institution. Some see this as part of the excitement of a new institution. Some do not. Whatever their predisposition or enthusiasm, it is not the usual role that faculty service plays in a university but is unavoidable in start-up institutions. Moreover the faculty of new institutions are mainly junior and while enthusiastic mostly, they naturally lack experience. The cross-cultural element informs all this: people arrive from different institutions with differing management ethos. Ideas about accountability, deference to authority, and communication will vary widely.

The service element of new institutions with a multi-cultural faculty continues to be an unresolved challenge for my own institution and I suspect some others. Core administrative processes were designed and operated by those we had appointed to different roles. The consistency, quality, robustness, scalability, and interoperability of the processes we design are challenged by the rate of growth in student numbers and the stakeholder-requested broadening of our mission. There is no straightforward solution to this other than acquiring leadership and management capability faster than one acquires faculty. Some startup universities have explicitly created the management team prior to admitting a single student or appointing faculty, hopefully eliminating or mitigating the above issues (ISIS-Innovation, 2014; Yachay University, 2015). We could not. Even in the circumstances of having a fully formed management team in advance, cross-cultural issues will continue to impinge. The balance between the executive and the consultative, the ways in which agreements are negotiated and implemented, the style of communication, the perceived separation between the authority of the post and that of the post-holder all vary widely.

Particularly pertinent here is that the typical US University model is towards one end of the continuum. It is effective in that setting but it is designed to maintain institutions not construct them. Many emerging institutions are in regions without that tradition and almost always expect results quickly. It seems typical that a more managerialist view emerges from new institutions. This conflicts with the more devolved models many faculty are familiar with. Sadly, this can sometimes result in conflict between faculty and administration. A deal of distrust can emerge from an administration which is genuinely trying to build the necessary core processes and a faculty used to considerably more autonomy as permitted and enabled by a well-established and robust system.

To the author it is most remarkable that even seasoned higher education specialists genuinely believe that faculty can create a new university. It is a little like believing surgeons, nurses, and osteopaths are the people best placed to construct a hospital. Over the longer term this can settle down. Once adequate processes are in place, the institution feels more settled and the requirement for this managerialist approach can slowly diminish. Furthermore the type of faculty that join an established university is different, they are mid-career, experienced yet still willing to learn new methods. This helps too. The initial stages however, are certainly full of passion.

Concluding Remarks

Rapidly developing knowledge-intensive institutions with predominance of expatriate workers face challenges different in scope and scale compared to their more established equivalents. These challenges include firstly, the work environment not being underpinned by a set of well-established tacit assumptions. Much of the effectiveness of the traditional informal, unstructured work-environment of many knowledge-based institutions relies on these shared assumptions as a means of ensuring order and progress. Secondly, the traditional academic culture of deferment to subject expertise and the subsidiary role of service means that the rate of change needed by new institutions is not deliverable by models of faculty or shared governance. Thirdly, the need to build new structures rather than evolve existing ones requires conceptually different skills and markedly greater effort than the well-established collegial consensus-based model can provide.

These three challenges leads to the paradox of expatriate leadership in knowledge-intensive industries, namely that the very things which are argued by faculty to provide the creativity, flair and insight in universities, are not compatible with the structures, processes, and timescale necessary to deliver that model. The challenge of expatriate leadership is therefore to resolve this paradox or at least acknowledge and manage its consequences. Leading expatriate-knowledge intensive industries requires a much more formal and project-oriented mindset than faculty are sometimes comfortable with. Furthermore, it is not entirely frank to claim that this is a temporary set of affairs and once fully-developed the institution will resemble a traditional university

model. Firstly this is because rapidly developing regions want a university fit for their needs not one that fits an abstracted model. Their needs tend to be specific, short- or medium-term, and subject to revision or extension. This requires an action-oriented and directed approach. Secondly the timescales to create a university that is considered internationally competitive is lengthy. Pohang University of Science and Technology (POSTECH) in South Korea (POSTECH, 2015) was founded in 1986 but took 25 years (and the shortest time on record) to break into the top 100 universities in the world, ranked as 66th in 2015 (TimesHigherEd, 2015). So it will be quite some time before an institution is considered research-intensive. Thirdly, such entities usually require significant governmental resources which imply scrutiny by media, political bodies, and governmental apparatus. This too increases pressures to have a more project-oriented and accountable organization. All these factors run counter to the collegial system where the balance between the consultative and the executive is strongly predisposed to the former.

So what has to be done to resolve or manage this paradox? It is important to acknowledge and accept it rather than behave as it were temporary or peripheral. Be clear and be public about this and encourage a debate around its implications at all levels of the institution. Moreover, the nascence of the institution, the faculty skillset and the regional expectations require a much more explicit and managerialist approach to the construction, leadership, and operation of the institution. This will incur significant internal pushback from faculty and other academic stakeholders but it needs to be done in order to maintain the positive growth path of the institution in a manner and timeliness that satisfies national and regional stakeholders. Finally, the leadership of the institution has to try and build as much of the organizational processes, leadership, and management teams before recruiting faculty or admitting students.

Leading expatriate universities is a race. It's a race to acquire faculty faster than you acquire students, acquire leadership faster than you acquire faculty, and acquire the organizational processes and methods faster than you acquire leadership. Experience at Nazarbayev University has shown if you win that race, your other problems won't matter much. And if you don't win, your other problems won't matter at all.

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THE ROLE OF TERTIARY EDUCATION IN ADDRESSING THE GLOBAL SKILLS CHALLENGE

Jamil Salmi

Introduction: Change and Disruption

It is a great honor and pleasure to be back at Nazarbayev University. It does not often happen, at least in my field, to have the opportunity of seeing the results of one's work. I feel privileged because I was invited to participate in the initial discussions about the establishment of Nazarbayev University. I remember a very cold December month being able to visit the construction site at the beginning of the project. So being able to see today the impressive progress achieved by Nazarbayev University is a very emotional moment for me.

Remembering that day of winter many years ago, I would like to show you the picture of a beautiful mountain covered with snow, which looks very peaceful, very tranquil. But if we get closer to it, we might hear some loud rumblings announcing an avalanche. This is what is happening in higher education today – many changes, many threats, and many risks. In fact, some people have announced the demise of traditional universities, soon to be replaced by the MOOCs, for example. I am not so sure that universities are in danger to disappear. But certainly they are under siege.

I see around us many factors that I would call rupture factors because they are indeed changing the environment in which universities operate. Let me mention a few of these disruptions. First, we now live in a world that is more uncertain and unstable than it ever was. Two decades ago, things were much easier. Young people knew what they wanted to study and what kind of job they wanted; the connection was clear and direct. But today the big challenge for students, for companies and even more for university leaders, is to train people for jobs that do not exist yet. How do we do that? That is a big challenge to guess what are the right skills for the twenty-first century.

We also live in a world of increased insecurity. Our world is not what it used to be, and sadly education institutions are also suffering. If you think about 2014-2015, two hundred girls were kidnapped in Nigeria; 43 students disappeared in Mexico, and a recent attack at a university of Kenya resulted in hundreds of deaths. The world of higher education has also become more precarious, especially for the academic profession. In many countries today more than a half of academics do not have a regular contract.

The other source of disruption is globalization. Did the Shanghai rankers realize, back in 2003 when they unleashed the first Academic Ranking of World Universities onto the world, how much havoc they were going to create, how many nightmares they would provoke among university presidents? A few years back, I was invited by the French Senate, the first time that my professional world intersected with the world of politics. The session was called `Forget Shanghai`. Of course we cannot forget Shanghai and the need to make universities accountable for their performance.

A few months ago, I was visiting an old friend who is the registrar at Oxford University, and he was telling me "You cannot imagine how much more difficult it has become, even for Oxford, to attract the most talented academics in the world". Today the top universities all over the world, from the US to Australia, from Singapore to Kazakhstan, are competing to attract global talent. At the same time, the sad reality that is hurting public universities all over the world is that they are receiving less and less public funds. In the US, for example, between 2008 and 2013, we have seen a sharp decrease in 48 out of the 50 states. I am told that even Kazakhstan is facing this harsh reality as a result of the fall in oil prices.

Ironically, at the same time that governments are giving their universities less money, they are asking them to be more accountable. Mind you, sometimes these demands for accountability are justified because there seems to be a big gap between what universities perceive they are

doing well and what the rest of the world thinks. A recent Gallop poll in the US shows interesting findings in that regard. University provosts were asked: “How well do you think your university is doing?” 94% of them responded that they are doing great. And then the students were asked: “Are you happy with the quality of education at your universities?” The response was that only 14% are highly satisfied. And then when employers were asked the same question, only 11% were satisfied with the skills of the graduates whom they hire.

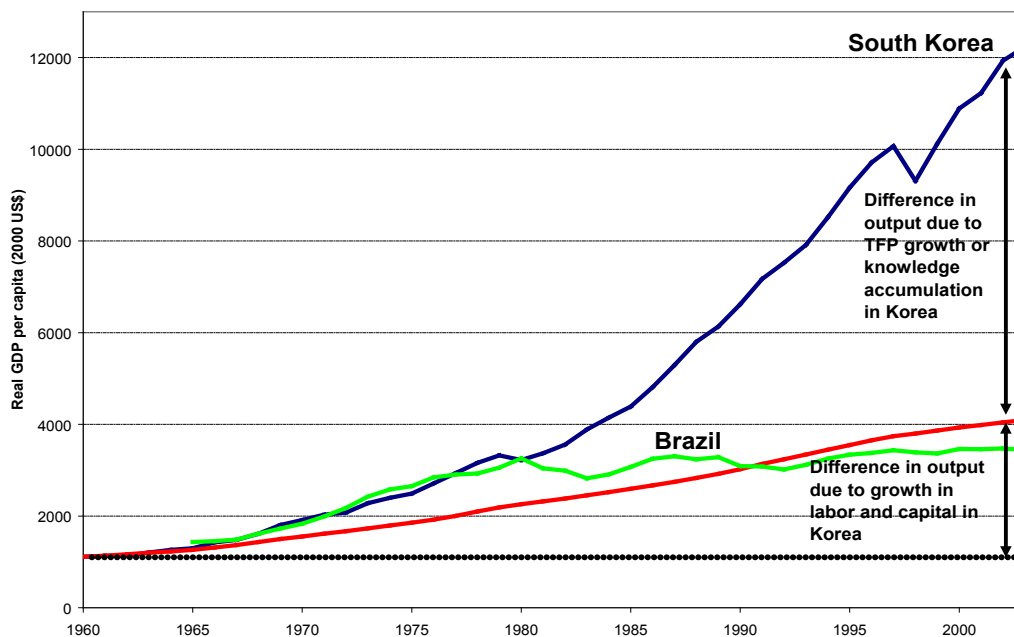
The last but not least disruptive source of change are the Internet and the new communication technologies. In the late 19th century in France, when teachers were asked what they thought was going to happen in the classroom by the year 2000, they had this image of knowledge going down through a machine and being fed directly into the brains of the students... Today ubiquitous access to all the information available on the world wide web has become a reality.

Against this background of disruption factors, I divided my presentation into two parts. The first part focuses on the importance of knowledge and skills for innovation. The second part looks at how innovation influences the way skills are acquired in universities.

The Role of Tertiary Education in Support of Innovation

A new Prime Minister took over in Norway at the end of 2013, Ms. Erna Solberg. In her inaugural speech, she warned her citizens: “Oil and gas represent the past! The future for Norway is knowledge, and that is what we need to focus on”. Figure 1 illustrates the importance of knowledge with the comparison of two countries, South Korea and Brazil, which were low income countries at the same level of poverty back in the 1960s, but have followed very different paths in the following decades.

Figure 1 - Knowledge as a Key Factor in Income Differences between Brazil and the Republic of Korea (1956–2000)

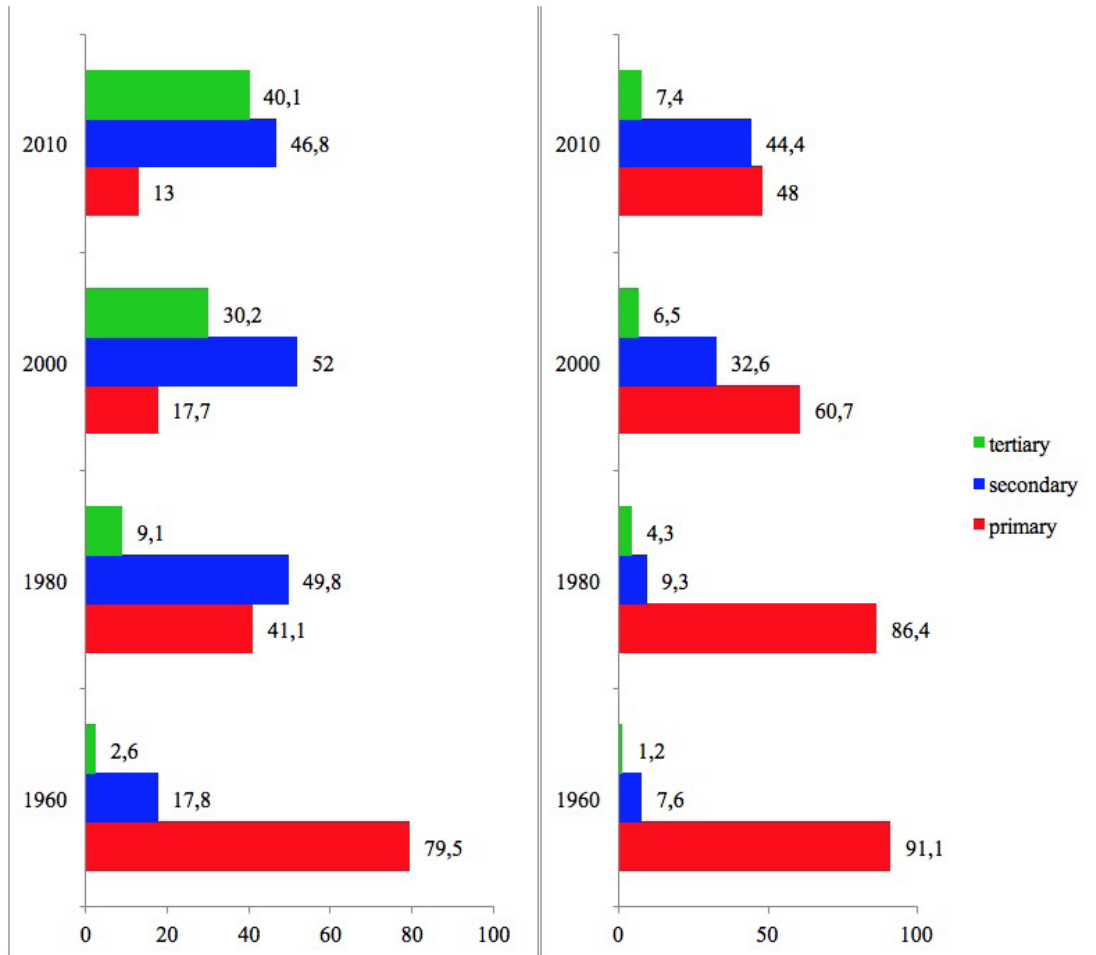


Source: Rodriguez et al (2008)

To complement this picture, it is useful to compare the evolution of educational attainment in both countries. Figure 2 shows the contrast between Korea, where the proportion of adults with a tertiary education qualification grew dramatically, and Brazil where investment in secondary and tertiary education was much less significant. While it is impossible to demonstrate a strictly causal relationship between educational attainment and economic growth in both cases, the 2008 study

of Brazil prepared by Rodriguez *et al* clearly indicates that innovation and productivity growth have been heavily constrained by the low proportion of adults with tertiary-level qualifications and the lack of linkages between universities and the productive sectors.

Figure 2 – Evolution of the Educational Attainment of the Labour Force in South Korea and Brazil (1960 – 2010)



Source: Barro and Lee (2012). *Educational Attainment Dataset*. Available online at www.barrolee.com

Another interesting piece of information is to analyze what happens with the scientists who are trained in both countries. In Brazil, 72% of PhD graduates stay in academia. By contrast, in Korea, 60% of them go out and work in the R&D departments of private firms, contributing to innovation and productivity growth. It is therefore no surprise to see that South Korea is doing much better in terms of patent production. In 1985, both countries were about at the same level, producing every year 50 new patents in South Korea and 39 in Brazil. By 2011, South Korea produced 14,440 patents a year, compared to 336 in Brazil. And let us not forget that Brazil is four times as populated as South Korea.

Brazil does boast a few success stories, though, such as Embraer. How has Embraer become the world leader in the production of regional planes? Is it just good luck, a pure random happening or the product of a deliberate strategy? In the late 1950s, the government had the vision of establishing a world-class airline industry. For that purpose, it set up, in partnership with MIT, the Technological Institute of Aeronautics. That is how Brazil was able to train the scientists, technicians, and engineers who built this world-class industry.

Let me give you another example to illustrate the importance of knowledge from a place closer to Kazakhstan. In northern Finland, 500 km north of Helsinki, there was a small city called Oulu in the middle of the forest. The main company there used to cut trees, making paper and

cardboard. But, back in the 1970s, the CEO of that company started to get worried about the future of his industry and so he challenged the Government – ‘If you establish a polytechnic university in Oulu, I commit to investing in modern labs and to bring more private sector investors.’ Academics in Helsinki were not so keen to move to this small city in the middle of nowhere, but the Government took up the challenge and established a university in Oulu and today the City of Oulu and the University of Oulu share a single website – because their development has been so closely interlinked. What was the name of this company whose CEO had a futuristic vision? It was Nokia which moved from being a company producing paper and cardboard and cables to becoming a world leader in electronics, contributing 20% of Finland’s exports and two-thirds of the country’s R&D funding.

Some people may object to this example because we all know that Nokia is not doing so well these days. But in fact it offers a second relevant lesson. Being a leader today does not guarantee in any way that you will continue to be a world leader tomorrow unless you keep renewing yourself and unless you keep innovating. What is true for a company is also true for a university.

Comparing two countries that are leaders in innovation, Chile in Latin America and Finland in Northern Europe, we can see that Chile has a population of about 17 million people, but only 185 PhD graduates working in companies. By contrast, Finland with only 5 million people has 23,000 PhD graduates working in industry.

The last point about knowledge is the acceleration of speed of creation of new knowledge, which makes it challenging for universities to operate as in the past, because in many disciplines what the students may learn in first year, may have become obsolete by the time she or he graduates.

The Impact of Innovation on Tertiary Education

Let us look at the side of the coin. How can innovation help universities improve skills acquisition? I see three dimensions that are very relevant. First, how do you produce the new global competence skills, attitudes and behaviors that are needed? Second, what type of new pedagogical practices can you introduce? Third, how can you rely on new technologies to support innovative teaching?

Many of you may have read a 1983 book called *Innovative Minds*, where Harvard professor Gardner first developed the idea of multiple intelligences. His work led him to the conclusion that that we should not see only the intellectual intelligence part (linguistic and logical abilities) but also the artistic part of human intelligence and the emotional part that are all very important constituents of the skills, knowledge and attitudes that graduates need. Australia’s chief scientist recently spoke about the importance of science for the future. “Without science we would have too little food to provide for the world and too little water for agriculture. Without portable water our health will suffer; without science our lifestyle will be damaged beyond repair; our future will be bleak to save the very list.”

So, the implication might be that we should focus on the STEM disciplines and forget about the humanities if it is all about science and if that is where our future lies. But I think this is a mistaken view, because we have to make fundamental distinctions between STEM skills and STEM degrees. When we think about a possible mismatch between higher education and the world of industry, this is a very important distinction to bear in mind. STEM graduates do not only go to STEM jobs, and vice versa. Policy makers in some US states now define what they call a pathway approach, which looks at what actually happens to university graduates. Recent findings show that many of the STEM graduates will go to non-STEM jobs. Similarly, while many of the humanities graduates will of course go to humanities and social science functions, a growing number of them are going to STEM professions.

People are now talking about STEAM skills, adding the arts dimension to the range of competencies that are needed for innovative economies. It does not mean that there is a need for

preparing more arts graduates. Rather, it is increasingly about forming people who can integrate both sides of the equation, the technology part and the design part. A friend of mine, professor at the University of Hong Kong, recently interviewed the CEO of Samsung cellular phones and asked him: "What kind of graduates are you looking for?" and "What kind of engineers or technicians do you prefer?" To my friend's surprise, the CEO of Samsung cellular phones responded that his challenge was not so much about finding graduates with good engineering or technical skills but the ability to also incorporate those skills that will allow them to design exciting new products. In fact, increasingly, the difference between high-tech products is not so much linked to their technical specifications but also to the design and the appearance. Steve Jobs once said that "it is not about the technological specifications of the products, but all about the marriage between technology and the humanities. That is what allows us to create the kinds of products that make our hearts sing."

Today the mission of universities is to impart complex competencies. These are the global competencies of the 21st century, notably information analysis, critical thinking and problem-solving, and global contextual analysis. Today, Nazarbayev University is not training people only for Astana, or for Kazakhstan, or for Central Asia. It is for the entire planet. And how do we prepare people for creativity? It is about learning to invent, to experiment, to think out of the box, to take chances, to break the rules, to make mistakes as part of your learning process, and to have fun throughout the entire learning process. While this is what Nazarbayev University is trying to do with its new curriculum, there are still many universities in the world that are teaching in a traditional way, leaving no room for innovative thinking and creativity.

The 21st century competencies are also about teamwork, collaboration and communication. Are we doing a great job? I like to talk to employers when I visit a new country, and I ask them the same questions as my friend from the University of Hong Kong asks. "What do you think about the graduates of the local universities? How are your new recruits doing?" Invariably I get the same answer: "Yes! The engineers, the doctors, the lawyers that come out of these universities are well-trained professionals. But ... they do not know how to work." Curiosity, motivation, initiative and entrepreneurial thinking are equally important characteristics among the competencies that graduates need. Finally come leadership skills and ethical awareness, which is the extent to which graduates are aware of social, cultural and environmental issues.

Is the Kazakh system of education doing a good job preparing for the 21st Century skills? If we believe the results of the latest PISA tests, which measure the proportion of 15-year-olds who are able to master problem resolution challenges, Kazakhstan, Kyrgyzstan and Russia are not doing too well, appearing all below the OECD average. This makes the task of universities more difficult, when the incoming students have not been fully prepared in primary and secondary education. For this purpose, Nazarbayev University has put in place a Foundation Year to complement the academic preparation of all new students.

The other important dimension that we need to be aware of is the need to think in terms of lifelong learning, which has to be embedded in the regular education of our students. Which of us would freely consult a medical doctor who announces that s/he graduated 30 years ago and has not learned anything since then? Preparing the students for lifelong learning does not mean only training them in self-learning skills, but also getting them to learn to unlearn, in order to get rid of those skills and competences that are not useful any more, and learning to re-learn to update their knowledge. The founder of Polaroid, Edwin Land, once said that it is not that we need new ideas, we need to stop having old ideas. Alvin Toffler, the famous futurologist, said that the illiterate person of the 21st century will not be the person who cannot read and write, but rather the person who cannot unlearn and relearn.

The possibility of applying new pedagogical approaches is an important dimension of innovation. Today, the educational process cannot be defined anymore in terms of what and how the teacher

likes to teach. It is imperative to focus on the needs and motivations of the individual learner. For that purpose, it is possible to organize the learning process in an interactive, collaborative and experiential mode. So, for example, one should not wait until the fifth year of engineering education to give the students the opportunity of making things, or the fifth year of medical education to start meeting with the patients. This paradigm shift requires that professors humbly accept that they are not indispensable for transmitting knowledge and recognize that their students can learn a lot on their own, and can learn from their peers. At MIT, for instance, several professors have experimented with the so-called flipped classroom, where the professor does not teach anymore and the students learn on their own. When they come to a session, the professor puts them to work in teams to solve problems as a way of verifying whether they have fully understood what they learned on their own and are able to apply the knowledge in a concrete manner.

Conclusion

In conclusion, universities have the opportunity to embrace a totally new education model. Before, it was all about the transfer of knowledge. Today students and professors are working together to construct knowledge. Before, it was all about following the instructions given by the teacher. Now the students can follow their passion. Before, students learned essentially in the classroom. Now they learn 24 hours a day, 7 days a week. Before, they learned on their own. Now they learn in teams.

This transformation is likely to affect the shape of universities, moving away from the traditional pyramidal structure with a majority of undergraduate students and a small proportion of graduate students towards a star configuration where undergraduate and graduate studies will be only one part of what universities do. More importantly will be the continuing professional development and career change studies needed to help people adjust to constantly changing job requirements. In addition, universities are not meant to only train professionals but also good citizens; for that reason, imparting citizenship and life skill will also be an important component of the curriculum.

Finally, it is worth noting that, because of the rapid changes characterizing the environment in which they operate, universities cannot afford to stay still. They need to keep improving constantly, driven by the awareness that universities elsewhere are not going to wait for them to get their act together. And the best way to prepare for a world of intense competition is through increased cooperation and collaboration. In that respect, we should recognize the wisdom of Nazarbayev University, which has focused from its first days on a strategy that embraces active collaboration with multiple partners in Europe and North America. As it pursues this strategy, it should continue to elaborate its own vision and work towards its implementation, always remembering the sage words of the Roman philosopher Seneca, who wrote more than 2,000 years ago that “there is no favorable wind for those who don’t know where they are going.”

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NURTURING NET GENERATION GRADUATES WITH GLOBAL SKILLS

Seeram Ramakrishna

Abstract:

The total enrolments in more than 20,000 universities and tertiary education providers around the world are in the range of 200 million students. One in five students are enrolled in technology related disciplines. Various surveys reiterate that only a fraction of graduates are suitable for careers in the world of hyper-connected economies and competitive businesses with supply chains spanning the world. Universities irrespective of where they are functioning are facing new challenges, opportunities and expectations. They are being assessed, benchmarked and compared frequently by third parties with considerable impact on reputation, student enrolments, and resources. Tertiary institutions are on the cusp of enrolling a Net generation of students, who have diverse learning aspirations and needs compared the earlier generations. The emerging scenario requires the tertiary education to be reimagined in terms of the way a) the students are developed to possess global skills and values, b) faculty members are prepared to inspire students, c) curriculum and pedagogy are tailored to the needs of 21st Century workplaces and jobs, d) scientific research and innovation are carried out, and e) entrepreneurship is facilitated at the universities. This manuscript is based on authors' own experiences during the rise of world-class universities in Singapore, and close interactions with several tertiary institutions around the world. The reimagined higher education will enable future graduates to build liveable and resilient societies.

Keywords: global skills, values, education, engineer, research, innovation, entrepreneurship

Introduction

The 21st Century is on the cusp of enrolling a Net generation of students to the universities and tertiary institutions. They students have diverse learning aspirations and needs. They wish to learn at their own pace and interact with peers while leveraging the technology-enhanced learning tools. They are open to diverse views, flexible careers (example, nano-jobs), and innovation and entrepreneurial pursuits. They are aware that their workplace will be different from the earlier generations as the businesses leverage supply chains spanning the world and compete to differentiate in the local markets.

Businesses are now leveraging and integrating innovations from around the world. They source finances and diverse workforce worldwide. They customize products to the markets they serve, as opposed to the past practice of standardized products made in one place and sold worldwide. This has been possible due to the internationalization of trade and finance, and availability of modern transportation and information and communication technologies (ICT). The 21st Century workplaces seek employees with cross-cultures work abilities and global knowledge and experience as they need to interact and move internationally. Businesses require graduates with strong communication skills who are open to diverse approaches, and who can lead multicultural teams. They must be proficient in ICT skills as well as problem solving skills with real world experience. They need to be innovative, relevant, persistent, and ethical.

The Net generation will live longer than earlier generations, and need to be economically active for longer periods. Formal learning multiple times as they age (life-long learning) and regularly upgrading skills and knowledge is the new normal. They are comfortable with digital technology and prefer blended learning methods. The Net generation of students have a choice of diverse education providers such as public, private, not-for-profit, for-profit, online, part-time, international branch campuses, and their combinations. They have access to worldwide comparison

of universities at the programme level, internationally recognized and accredited programmes, and opportunities for the global experience at home and abroad.

This emerging scenario requires the tertiary education to be reimagined in terms of the way a) the students are developed to possess global skills and values, b) faculty members are prepared to inspire students, c) curriculum and pedagogy are tailored to the needs of 21st Century workplaces and jobs, d) scientific research and innovation are carried out, and e) entrepreneurship is facilitated at the universities. The following sections describe reimagined undergraduate education, graduate education, and scientific research, innovation and entrepreneurial culture at the universities so as to impart requisite skills, values, attitude, and knowledge to the graduates, which enable them to be suitable for diverse socio-economic opportunities.

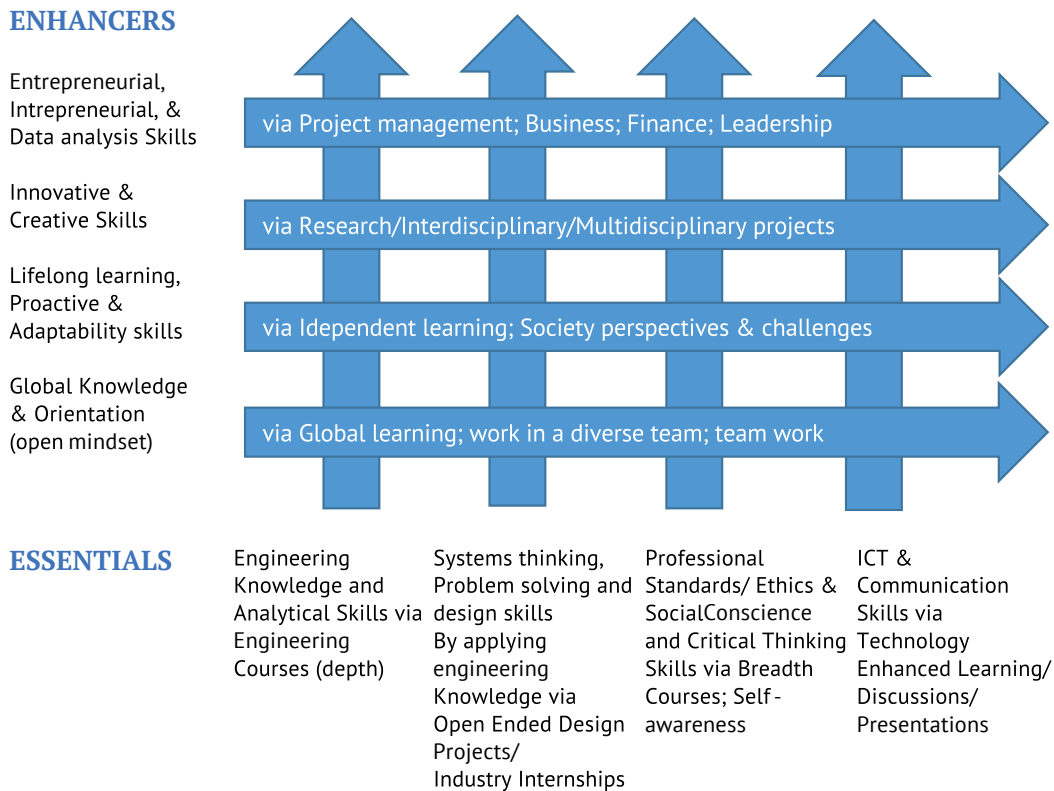
Reimagined Undergraduate Education

Various aspects of reimagined undergraduate engineering education are captured in the Schematic 1. Most engineering education providers have focused on technical depth courses involving engineering science fundamentals and engineering. Some institutions recognize the need for imparting ICT and communications skills and students' exposure to the professional ethics and standards. They are embracing technology-enhanced teaching and learning. The assortment of terms used to describe the application of ICT to teaching and learning include e-learning, online learning, cyber learning, virtual learning, computer-based instruction (CBI), computer-based training (CBT), computer-aided instruction (CAI), internet-based training (IBT), web-based training (WBT), fully online distance learning, digital educational collaboration, multimedia learning, m-learning (mobile technologies). Essentially all these are forms of technology-enhanced learning and teaching methods to facilitate various pedagogies asynchronous learning, blended or hybrid learning, flipped or inverted learning, personalized learning, collaborative, peer learning, problem-based learning, outcome based education, active learning, etc. In other words they capture the imagination and needs of the Net-generation students. International branch campuses and private tertiary education providers are early adopters of technology-enhanced teaching and reach out to the students. Obstacles for fully adopting technology-enhanced learning include a) reluctance on the part of faculty members to change, b) lack of necessary support for faculty adopting new technology and pedagogy, c) curriculum and pedagogy lagging behind, d) not yet fool proof against cheating, e) issues associated with quality assurance and assessment, f) lack of trained staff to support, g) financial viability, h) technology divide among the students, i) limitations on extent of social interactions among students and between teacher and students, and j) asynchronic feedback. Judging from the rapid progress of ICT technologies in recent years, it is conceivable that many of the above mentioned bottlenecks will be overcome in the coming years.

Universities are also making efforts to develop systems thinking, problem solving, creative and innovative skills of the students by introducing design projects, research projects, multidisciplinary projects, and industry sponsored projects, and flexibility in the curriculum for self-directed learning and peer to peer learning. Breadth courses offer the opportunity to develop abilities such as entrepreneurial skills, creativity, lifelong learning, and global knowledge. The application of engineering principles to new types of problems can develop critical thinking by requiring new elements of thought, e.g., new questions, new points of view, new interpretation and inference, and different implications and consequences. In both depth and breadth courses, students' motivation and interest in engineering could be enhanced by relating classroom teaching to the real life experiences and societal challenges, by updating courses with new knowledge, by providing hands-on and experiential learning (experi-learning) involving problem solving, applying knowledge and skills, hands experiments, industry internships and internships abroad, by providing interdisciplinary and global learning experiences, and by providing opportunities for entrepreneurship, intrapreneurship, team work, and test bedding solutions. Curriculum may

be re-casted to accommodate bit sized (shorter duration) modules so as to involve industry professionals as well as international academics. Students’ exposure to the international academics and industry professionals will expand their horizons and open up their minds for new possibilities. In other words, the T-engineers (with depth and breadth skills and knowledge) should be developed with greater emphasis on experi-learning.

Figure 1 - Key features of training T-Engineers via experi-learning



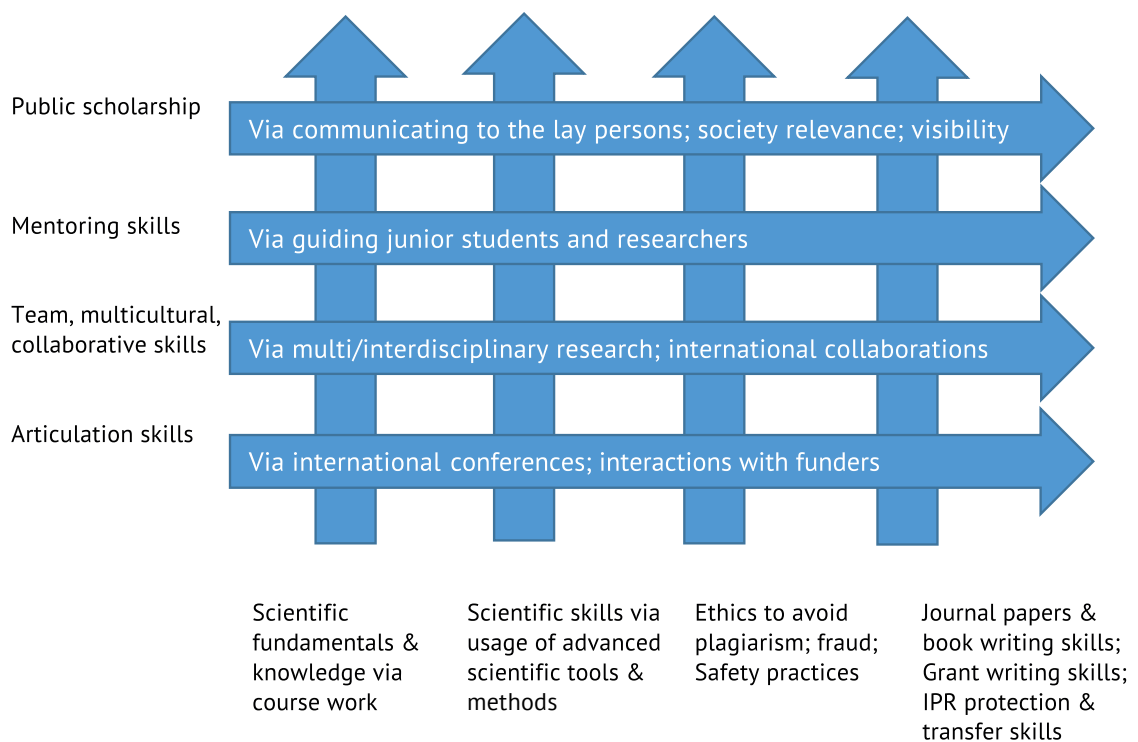
Reimagined Graduate Education

For long the graduate (post graduate) education is not high on the agenda of academic leaders. Graduate class work typically comprises a selection of courses on core engineering subjects, emphasizing mastery of fundamental engineering principles and thus preparing students for the PhD qualifying exams in a particular discipline. The skills and knowledge acquired through the graduate research work depend largely on the particular research project that the student works on. The quality of graduate training should be given greater attention as some graduates will go on to become academics and influence and inspire future generations. Many of them will also become chief scientists, chief technology officers, and chief information officers. They contribute to the organizations and support their chief executive officers in foresight, strategies, vision, and new innovative products. Along the way some of them will become entrepreneurs by setting up start-up companies based on their own experience and research led innovations. Hence from these diverse considerations, there is a need for training quality graduates in a more holistic way and future ready, and what should that be?

World class universities have been paying attention to the postgraduate students’ abilities to use modern scientific tools and methods, and advanced scientific knowledge and skills imparted in specialized domains. However solving many challenging problems such as clean water, energy, environment, transportation, food and nutrition, health and wellness, and security and liveable societies require integrative minds. Most interesting and useful innovations in recent years are a result of multidisciplinary and interdisciplinary efforts. Hence the students should be given opportunities to collaborate and interact with other disciplines. For sustaining a research-led innovation career which typically spans over four decades an individual needs to raise funds

regularly in a competitive and resources limited world. This requires effective communication and marketing skills to convince diverse investors and stakeholders while maintaining ethics and research integrity and respecting intellectual property rights of others. In order to develop and implement innovative solutions to the societal challenges often researchers must be able to work with others from different cultures, languages, norms and safety standards. Hence the graduate researchers need exposure to overseas research cultures and practices, and familiarity with intellectual property protection and transfer processes. The graduates should be mentored to aim the right questions with the right approach and attitude and to convey effectively the importance, relevance and impact of their work. Curricula should be flexible enough for those who desire to pursue entrepreneurship and translation of research outcomes into practice. Various aspects of a reimagined quality graduate education are captured in the Schematic 2. University's internal structures should have porous boundaries to facilitate interdisciplinary research and learning. Academic environment should be conducive for collaborative research and creating new frontiers. Perhaps global graduates be developed via enhanced interactions with overseas peers via a) visiting faculty, b) graduate student exchanges, c) collaborative research, d) joint publications, e) joint conferences, f) joint graduate courses, etc.

Figure 2 - Key features of quality graduate education

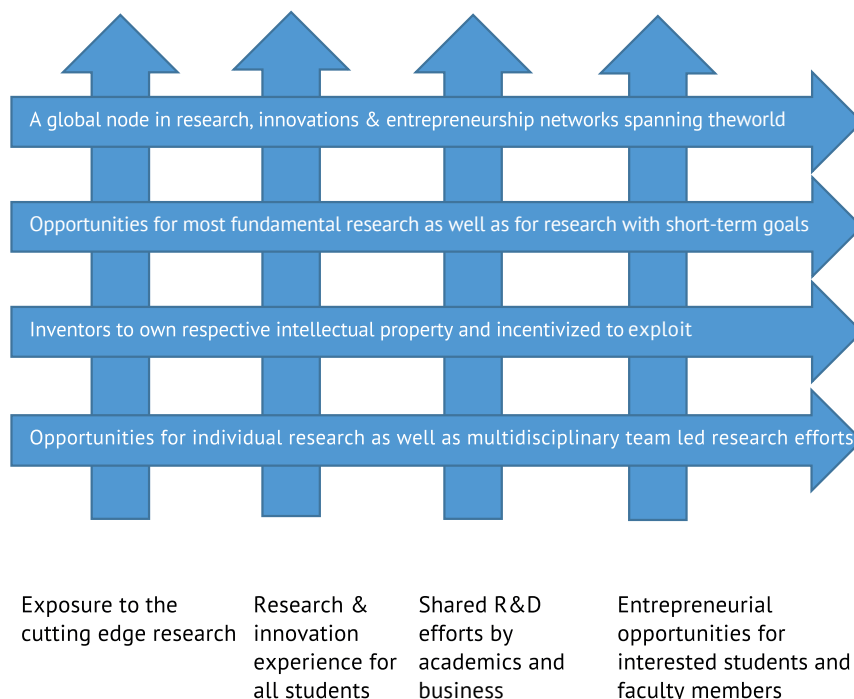


Fostering Vibrant Scientific Research, Innovation & Entrepreneurship Culture about fifteen percent of 20,000 universities around the world are ubiquitously active in scientific research. Majority of them are in high income countries. They perform both scientific research and education. However, bulk of the universities around the world are primarily involved in educating students, and not involved in scientific research and new knowledge generation. This is due to the national policies which expected the universities to focus on educating large number of students, whereas the respective national laboratories and dedicated organizations to focus on mission oriented scientific research and development. This situation has led to a) academic faculty members using outdated knowledge teaching students, b) poor infrastructure so that teaching is heavy on theory and less on hands on experience, and c) less confident and under prepared students for the fast paced innovations and competitive world. Evidence in recent decades suggest that education and scientific research efforts should be intertwined at the universities especially to facilitate

technology-entrepreneurship, novel innovations with fresh minds, and solutions to the societal challenges. In order to foster vibrant scientific research, innovation and entrepreneurial culture, universities are to implement several aspects captured in the Schematic 3. Most faculty members at the majority of 20,000 universities around the world are not exposed to the cutting edge research in respective fields of interest. Sending faculty members on short term exchanges to the world’s leading research centres will enable them to appreciate the latest trends and approaches to the scientific research and innovation. Upon return they can apply similar or fine-tuned approaches which better suit the respective local needs and conditions, and to address the locally relevant grand challenges. University policies should encourage ubiquitous research and innovation culture involving all students and faculty members. For undergraduate students it could take the forms of undergraduate research opportunities programme and final year research project. Scientific research and development is becoming expensive. Neither universities nor businesses have all the resources they need to generate new knowledge and translate into innovative products. Shared efforts by the universities and businesses in terms of research facilities, infrastructure, research human capital, prior knowledge, and translation into products are desired.

New knowledge generation and translation it into viable products and services often require different, complimentary skills. Only a fraction of researchers have the appetite for entrepreneurial pursuit. Even the research-intensive universities are yet to master the ubiquitous entrepreneurial culture. Universities must proactively implement policies that encourage students as well as faculty members interested in entrepreneurial pursuits. A fraction of proactive universities go to the extent of allowing inventors to own respective intellectual property rights and further incentivise them to exploit inventions. Universities are to make efforts to become an active node in the global networks of scientific research, innovation and entrepreneurship. While universities and research funding agencies emphasize addressing of grand challenges of the societies via multidisciplinary team efforts, there must be room for individual research motivated by the most fundamental questions in chosen domains. For this purpose, the research funds and individual researcher’s time may be managed by one third and two thirds principle i.e. two thirds focused on research with specific short term goals, and one third focused on the most fundamental and interesting research.

Figure 3 - Fostering Vibrant Scientific Research, Innovation & Entrepreneurship Culture at the universities

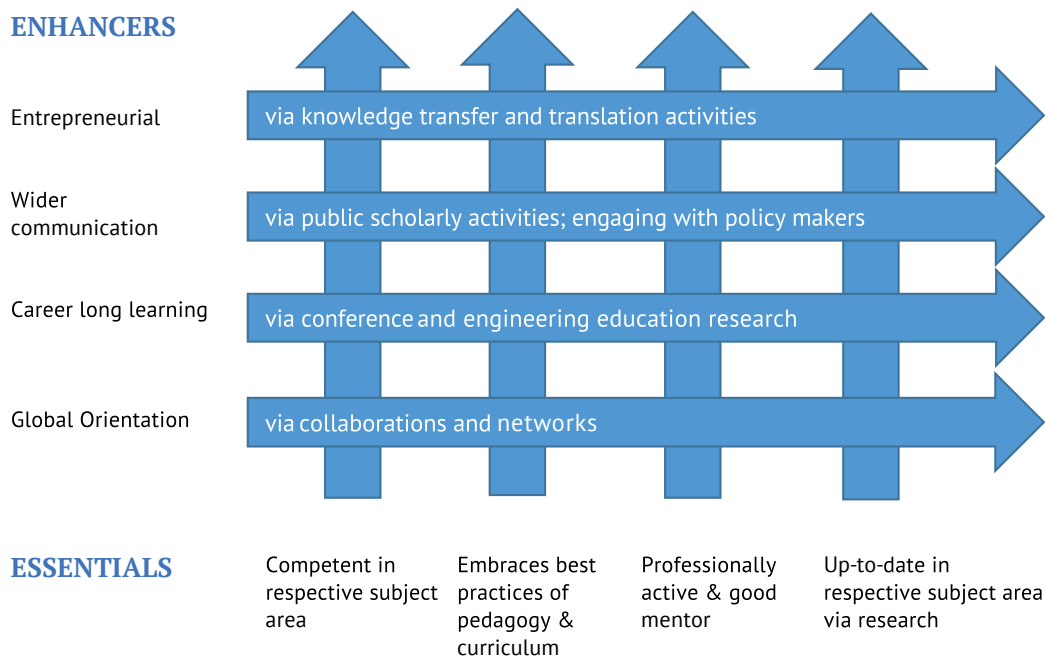


According to a 2010 survey by Morell and SPEED (Student Platform for Engineering Education Development), the key attributes a well prepared engineering faculty member include a) competent in his/her own discipline, engineering fundamentals and problem solving; b) current in his/her research, publishes, networks, communicates effectively and keeps up with trends in his/her discipline; and does all of the above with an entrepreneurial spirit; c) an effective teacher, knows about learning and outcomes assessment, facilitates learning using learner-centred strategies, keeps up with developments in engineering education, studies and uses the effectively, cares about the students and their learning, enjoys being as a mentor; d) understands the role that the profession has in society both locally and globally, practices it as part of his/her career development as well as leads, serves and participate in forums to promote policy making and excellence in engineering education and research/innovation; e) aims at developing the skills and competencies engineers should possess through practice and experience in order to better serve society and be a role model for students.

The faculty members of engineering schools are to follow essentials and enhancers mentioned in Schematic 4 to possess necessary attributes to nurture future engineers. While they are competent in respective subject areas they must also keep up via research and development. They must be professionally active and embrace best practices of pedagogy and curriculum so as to inspire the Net generation. Their own global understanding and connections will enable them to serve as good mentors. Participation in public scholarly activities in addition to the respective professional activities will enhance their image in the eyes of students. They could sharpen their entrepreneurial abilities by actively pursuing knowledge transfer and translation via industry projects and start-up company activities.

In other words well prepared faculty members are essential to foster vibrant education, scientific research, innovation and entrepreneurship culture at the universities.

Figure 4 - Enabling Engineering Professor to Inspire the Net Generation



Conclusions

The total enrolments in more than 20,000 universities and tertiary education institutions around the world are in the range of 200 million students. The majority of them have come into existence over the last fifty years in response to the growing demand for higher education. They are diverse in terms of nature of institution (public, semi-public, private; religious, teaching, research, and

research-intensive), size (boutique, medium and large enrolments), governance (autonomous and semi-autonomous), funding mechanisms, range of programmes, location, mission, vision, mode of delivery (full time, part time, online, mixed mode), level of resources, quality of students, gender of students, quality of faculty members, flexibility of programmes, national and international partnerships, accreditation and quality assurance, etc. Recent decades have also seen widening of tertiary education covering many new disciplines which have flourished at the interfaces with other disciplines. While the mass higher education goals of nations are fulfilled, an unintended consequence is emerging. A good proportion of the graduates are either underemployed or unemployed. They lack the requisite global skills, attitudes and values. Reasons include a) static nature of curriculum and pedagogical methods, b) inadequate infrastructure and resources at the universities, c) underprepared faculty members, d) varying motivations of Net generation of students, d) separation of education and scientific research at the universities, and e) mismatch between the needs of dynamic jobs market and global skills and knowledge of graduates.

It is opportune time to reimagine tertiary education by a) embracing technology-enhanced learning and teaching, b) training educators, c) fine tuning curricula to suit the needs and expectations of the Net generation students, d) facilitating cutting edge research culture to spur the next wave of innovations, and e) providing opportunities for entrepreneurship. Continual improvement in all aspects of tertiary education, scientific research and entrepreneurship is to be pursued vigorously and passionately.

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- 2010 Invited lecture on *Experiences in Project-Based Learning*, National Academy of Engineering Frontiers of Engineering Education, Irvine, CA
- 2010 Invited lecture on *Integrating Project-based Learning in the Engineering Curriculum*, Ust Kamenogorsk State Technical University, Ust-Kamenogorsk, Kazakhstan

PRACTICE-ORIENTED LEARNING – A PLATFORM FOR THE FORMATION OF GLOBAL SKILLS

Jamilya Nurmanbetova

Glocal people are needed in all fields of life-sustaining activity as business, industry, education, health, environment, technologies. To develop glocal people is the key aim the world higher education system is intending to achieve. What kind of people are glocal people? People, who think globally, act locally. People who act as masters of logical, critical, lateral, creative and systems thinking and who can think globally and consequently solve local problems. Value and demand for glocal people are increasing during the crisis (economic, political, etc.). Why do we need glocal people? How are glocal people developed or how should they be educated?

Glocal examples or examples of “think globally, act locally” are:

- higher education: well – known and highly – experienced educators, worked in the top list universities, may reform developing their home country’s universities due to their needs;
- McDonald’s: McDonald’s strategy is to listen to local consumers more and then act on it. The Company strives to do this around the world;
- KFC: to increase visits from local residents, KFC has initiated a five-year plan to upgrade its UK restaurants with new contemporary designs. Designs will be based on the ‘look and feel’ of the area and in collaboration with local property developers (Business and Management Case Studies, 2010).

Taking into account an increasing global economic integration, any government wants its country to have high-skilled economies. Kazakhstan is an upper-middle-income country with rapid economic development and focuses all efforts on joining the rank of the top 30 most developed countries by 2050. Kazakhstan has focused on the creation of a market economy based on protecting the institution of private property and the full support of entrepreneurship initiative. In this regard, Kazakhstan works tenaciously at developing opportunities for small businesses, which are a vitally important platform for its economy.

There are many state programmes aimed at promoting economic diversification of economy and improving competitiveness among small and medium-sized businesses:

- the Kazakhstan Small Business Programme II (KSBP II) is the continuation of an already successful MSE finance facility in the amount of US\$ 77.5 million that focuses on institution building in selected local commercial banks to deliver financial services to micro and small enterprises countrywide;
- the Damu Fund provides interest-rate subsidies on loans to entrepreneurs, and bank guarantees to entrepreneurs in obtaining credits;
- the “Business Road Map 2020” is focused on the maximum use of market institutions.

All measures of financial support are provided through commercial banks, thereby avoiding excessive state intervention in market relations. To date, over 450 contracts on subsidies and guarantees totaling KZT 178 billion, or \$1.2 billion, were signed as a result of implementation of the “Business Road Map 2020”.

Moreover, Kazakhstan is a country with global ambitions, and as many well – developed countries, takes necessary steps towards the aim of creating a well – educated, high-value, low-cost workforce to compete for global market share. The Programme “Strengthening Entrepreneurial Potential” began in 2011 and includes training programmes of new entrepreneurs, provision of service and consulting support for doing business, international training initiatives, improving the competence of top management of private enterprises, etc. The Damu Fund is represented by

sixteen branches in all the regional centres. The Damu Fund provides almost the entire Kazakhstan with courses, consulting programmes and workshops. In order to support entrepreneurship, 17 Entrepreneurs Service Centres were established in regional centres and cities of Astana, Almaty, Semey; 27 Business Support Centres in single-industry towns and 14 mobile Business Support Centres in 2012-2013.

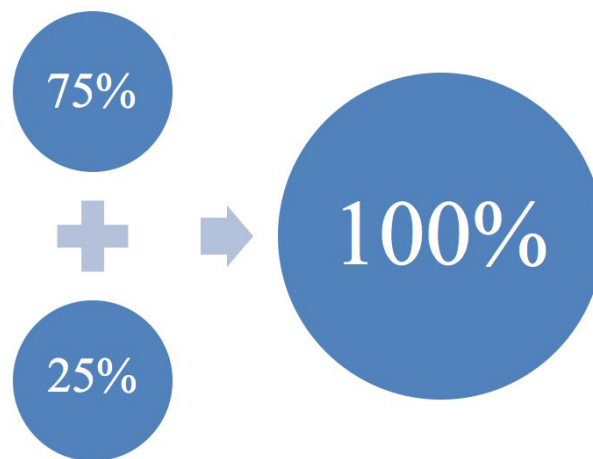
A well-educated, high-value, low-cost workforce – global thinkers – are educated through practice – oriented learning. Global thinking firstly starts with forming logical, critical, lateral, and creative and systems thinking during the whole learning process.

Kazakhstani universities try enhance students’ academic and research skills as well as critical thinking skills. Due to the significance of such economic indexes as commercial value and content resource the universities have widen their range of skills:

- strategic management
- global thinking
- entrepreneur’s skills

The range of the above – mentioned skills have an impact on graduate employability. 75% of graduates are employed within a year after they graduate and 25% are left unemployed.

Figure 1 – Percentage of student employment



Reasons for unemployment include low salary, failed expectations, lack of open positions; no strict compliance with labor legislation in case of employees’ rights protection, no correspondence to skills required for the position, no opportunities of career progress, no advanced training or improvement courses.

In most cases, employers are not satisfied with the graduates’ competences. As a rule, hirers have to retrain those who have just graduated from universities. As a result, employers do not want to pay high salaries to such employees and to provide their further career progress. Whereas excellent academic results are not the indicator of employability. There is an academic progress table of employed and unemployed graduates (100 people took part in the poll) which testifies that both of them have good academic progress.

Table 1 - Progress of employed and unemployed graduates

<i>Academic progress</i>	<i>Employed</i>	<i>Unemployed</i>
<i>Excellent</i>	12 %	20 %
<i>Good</i>	14 %	39 %
<i>Satisfactory</i>	39 %	21 %
<i>Unsatisfactory</i>	35 %	20 %

Unemployment based on employers' dissatisfaction is confirmed by staff that international companies hire. According to the data of the Agency of Statistics, the number of registered and active international companies in Kazakhstan has reached 32 680 (Russia, Turkey, Uzbekistan, China, Korea, Germany, the Netherlands and so on). Nowadays Kazakhstan is a promising reliable platform to invest in. Obviously, the key factor of investors' attraction is social and political stability, development of trade and economic integration processes. The appearance of new investors widens variety on the Kazakhstani market and creates new workplaces which require not only knowledge but also a great number of key competencies developed under the "think globally, act locally" principle that include: skill to distinguish differences in cultures; skill to understand and take into consideration different opinions; skill to think critically and compare facts; skill to find a decision to different tasks; skill to act in the conditions of uncertainty; understanding of global problems and challenges. As Sonja Stockton, Director, Talent, PricewaterhouseCoopers (Think Global and British Council, 2011:1) points out:

"What global companies look for are people who we think can take a global perspective. Students are well placed to do this if they have taken opportunities to widen their cultural perspective. The people that succeed can work in multi-disciplinary, multi-cultural and multi-locational teams. If students have demonstrated they can work with other cultures and teams, that's a big plus for us as we need students to be intellectually curious and culturally agile if they are going to work in a global context."

Kazakhstani universities maintain the student-oriented approach when students solve problems, answer questions, formulate questions of their own, discuss, explain, debate, or brainstorm. Moreover, students work in teams on problems and projects under conditions that assure both positive interdependence and personal responsibility.

Observations of the current provision of the teaching practice as part of education programmes highlight a number of difficulties. Recent studies conducted in some Western countries show that there is a gap between theory-based education of students and requirements for "new" skills in practice. Standard education curricula are directed to theoretical learning more than practical in Kazakhstan. Kazakhstani universities' academic programmes usually suggest first two years of studying to be more theoretical, in particular the Ministry of Education presupposes such courses as History, Economics, Philosophy, Psychology, Physical training, English that are compulsory for obtaining any qualification. Beginning with the third year of study, students start learning disciplines relevant to their future qualification though they have only three semesters for the major courses in general. Moreover, only a week of the third year of study and two months of the second semester of the fourth year of study focus practice-based learning where students just gain insights into details of their future work (only if they are lucky enough to enter the company or enterprise of their qualification as the connection between universities and business is not so tight as it should be). Consequently, many education programmes do not provide a coherent practice component.

The proportion of time spent specifically on professional training and the number of credits for practice varies not only across different countries, but also between departments and faculties within the same university. For students to have an integrated experience of practice, they need to connect understandings that they develop in practice situations with theories and understandings about practice that might be developed in a range of ways in their university courses (University of Technology Sydney, Practice Orientation, 2015). Students need explicit opportunities to engage in all parts of the experiential learning cycle: planning and preparing for practice experiences; engaging in practice; reflecting, interpreting and making connections during and after practice. These opportunities need to be made in the curriculum and supported by student engagement with others in both university and practice environments. Learning technologies, including blogs and e-portfolios, can be used to support students' reflection, with

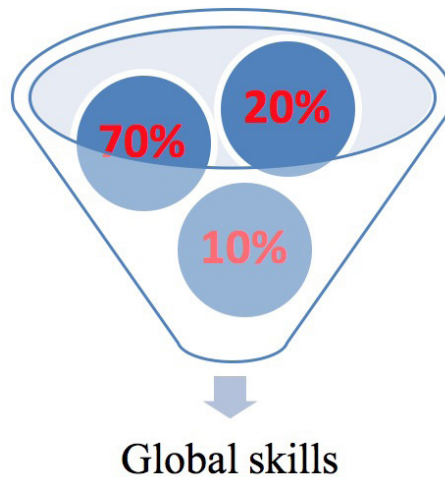
online discussions and web technologies used to support students in sharing and comparing experiences with those of their peers.

A curriculum-wide approach to practice-oriented education implies that students have opportunities to engage in a diversity of practice-related experiences. The following indicates a rough continuum of practice experiences, from more to less student immersion in practice:

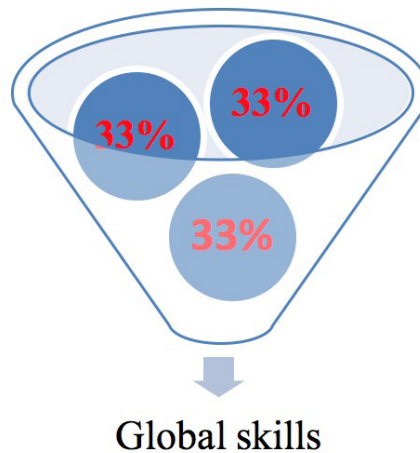
- recognition of work-based learning (offered by the university)
- recognition and intellectual extension of learning in practice;
- a wide range of internships and practicums what presupposes a deep involvement of enterprises into the educational process in general;
- field trips and visits, real and virtual;
- simulations and role plays: high to low fidelity, face-to-face or online;
- problem-based, issues-based or practice case-based approaches to learning in subjects (popular case studies);
- student use of cutting-edge technologies in practice-based scenarios;
- student-created media resources that illustrate aspects of practice, including podcasts and vodcasts (higher immersion for the creators, lower for other users);
- guest lectures and vodcasts or podcasts from professional practitioners (again there is a reference to the link between business and university).

However, forming practice-oriented skills requires academic programmes build on the “70:20:10” model. The 70-20-10 model accredited to Lombardo & Eichinger (1996) suggests that lessons learned by successful and effective managers are roughly 70% from tough jobs, 20% from people (mostly the boss), and 10% from courses and reading.

Figure 2 - Lombardo & Eichinger’s training model (1996)



Dan Pontefract (2013) suggests 3-33 model: the learning ratios of 3-33, which stands for 33% of the formal learning, 33% of informal, and 33% of social learning. 3-33 model - pervasive learning model is a collaborative, continuous, connected, and community-based growth mindset.

Figure 3 – Ponterfract’s training model (2013)

Academic programmes in our country tend to have the following model: 10:10:80 where practical learning takes 10 %, feedback - 10% and theoretical learning - 80 %. Thus, there is some evidence of the lack of academic freedom in ways of changing academic programmes, insufficient consideration of students’ and employers’ interests, out-of-date approaches to research-based learning. In accordance with this evidence, there is a necessity to tackle the following issues:

1. developing willingness of the faculty to adhere to new job requirements;
2. developing an entrepreneurial and corporate environment;
3. increasing labor market sensitivity.

Project – based learning is a necessary part of practice-oriented learning and one of the major components of global skills education. Students gain knowledge and skills by working for an extended period of time to investigate and respond to a complex question, problem, or challenge.

Learning is a social activity and relevant teaching methods can scaffold students’ prior experiences and take into account the role of community and culture. Furthermore, as we live in an increasingly more technological and global society, faculty members realise that they must prepare students not only to think about new information but have them engaged with tasks that prepare them for this global citizenship and consequently for global skills. Although project-based learning can be done in combination with the national standardized testing model, it is often difficult for teachers to effectively interweave these two seemingly different types of instruction.

In order to create effective project-based learning units, professional development organisers suggest using the following guidelines:

- Begin with the end in mind and plan for this end-result.
- Craft the driving question; select and refine a central question.
- Plan the assessment and define outcomes and assessment criteria.
- Map the project: decide how to structure the project.
- Manage the process: find tools and strategies for successful projects.

Project-based learning can involve, but is not limited to: asking and refining questions; debating ideas; making predictions; designing plans and/or experiments; collecting and analyzing data; drawing conclusions; communicating ideas and findings to others; asking new questions; creating artifacts.

The content of the courses and workshops is usually based upon developing strategies and finding solutions to global and large-scale problems in a series of practical tasks. During individual and team work students explore the connections between environmental, social, economic and other aspects of life.

Globalization, economic competition, development of pilot technologies and innovations, a wide range of information dictate an increasing role of practice-oriented skills and individual professional qualities of a self-study process.

A knowledge-driven economy demands a larger proportion of qualified workforce with access to lifelong learning opportunities. This has had a major impact on participation rates in tertiary education. Whatever the merits of the economic case for expanding higher education, there has been major growth in all OECD countries. Canada was the first country to achieve the target of over 50 percent of people aged 25 and 34 to enter the job market with a tertiary level qualification, followed by Korea, which has engineered a massive growth in tertiary provision since 1991.

To tackle these tasks national legislation should become more flexible which will lead to the independent decision-making process and rise in civil responsibility of the universities.

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PERCEPTIONS OF EMPLOYABILITY, SKILLS AND INDIVIDUAL ASPIRATION IN A DIVERSIFYING ECONOMY

Alan Ruby

Employability is a relatively new concept. The notion that post school educational institutions should play some role in preparing young people for employment really only came into focus as participation increased and the curriculum offerings diversified. As higher education moved from being the domain of the few- the elite – to being a mass or near universal destination for all who had ability and aspiration greater attention was paid to the employment of graduates.

And employability is a variable, changeable concept. For some employability means the graduate's readiness for a specific trade, profession or vocation. Others stress the importance of preparing young people for life time employability which includes the capacity to continue to learn and adapt. This broader conception is important because it acknowledges that the nature of most forms of work changes over time and that the occupational structure of economies change as technology increases the productivity of individuals. It also important because it gives individuals a degree of individual freedom – it gives them a skill set that is portable and transferrable. It allows them to choose to change jobs, change employers, change sectors and even change location. This is particularly important in diversifying economies and where small and medium enterprises are widening the range of economic activity offering entrepreneurial opportunities

Our focus in this panel session is on the different perceptions of the notion of employability and the skills that young people have when they leave higher education. What matters to educators, employers, policy makers and by individuals seeking work? Are there fundamental disconnects between these different views that limit the effectiveness of our educational programmes and constrain the economic and social development of the nation?

This session explored these differences in perception. Our lead speaker Alper Akdeniz from PriceWaterhouseCoopers brought an international perspective to the question of employability with direct lived experience in four different regions of the world with very different labor markets. He also brought the perspective of a leader of a multinational enterprise and employer that has supported large scale mergers of global enterprises. And he carried the insights of a trained accountant – one of the increasingly global professions.

Alper Akdeniz identified a set of mega trends that are external to nation states and to institutions. Yet these trends shape the work of institutions and the direction of the social and economic development of nations. These trends also shape the opportunities for young graduates changing the demand for certain skills and capabilities as technology changes notions of productivity and leads to changes in work processes. These changes are reflected in the opinions and judgements of Chief Executives who are regularly surveyed by Price Waterhouse Coopers.

His introductory address reminded us that horizon scanning, looking for the mega trends and the discontinuities and opportunities in a changing environment, is one of the important roles performed by Rectors and Boards of Trustees of colleges and universities. They have the responsibility to look for market signals that show that demand for certain skills is either increasing or decreasing with consequent changes in the value.

Our three panelists brought different perspectives. First we had the perspective of a national policy maker Kanysh Tuleushin, Managing Director of Joint-stock Company National Management Holding Baiterek. Kanysh Tuleushin's current responsibilities include leading the Holding's financial and investment support of non-oil and gas sector, ensuring sustainable development and diversification of national economy, attracting investment, and improving corporate management systems at its subsidiaries. Baiterek holdings has made significant investments in small and medium businesses and supported and guaranteed loans to over 3600 private entrepreneurs. These and

other activities have helped to create about 85,000 jobs. The Holdings encourage entrepreneurship, self-employment and for people to become employers to attract and use skills that they do not have themselves. This focus on the individual and his or her capacity to be an employer, a creator of jobs, or to be a sole practitioner is in contrast to the passive, supplicant role that is sometimes associated with notions of 'employability'.

Against this background it was not surprising that Mr. Tuleushin reminded us that as non-extractive industries are emerging quite quickly in Kazakhstan and that these small and medium enterprises are an important part of the future of the nation. The growth of this sector is accelerated by entrepreneurial activities, an area of particular interest to Baiterek Holdings

Our second panelist is Rector of Karaganda State Technical University (KSTU), Arstan Gazaliyev, leader of an educational institution, an observer and interpreter of those market signals. KSTU is a very strong technical university focused on engineering, technology, mining and architecture but it also has a commitment to foreign languages through its Confucius Institute. It has close ties to industry and offers students experiential learning through its many science and research laboratories. These close links help it manage one of the potential mismatches- the different rates of innovation and the adoption of technological change in industry and in universities. By design educational institutions are conservative entities committed to preserving knowledge and associated skills and values and transmitting them across generations. They tend to lag behind enterprises which are looking for greater productivity and are quick to adopt new processes. Yet employers also often demand that graduates have a solid grounding in the traditions and fundamentals of a discipline or occupation. Students come to KSTU to prepare for specific fields and aspire to jobs in particular sectors. But they come with the knowledge that technology is changing rapidly and re-shaping the current work place and rearranging the occupational structure of the local and regional economies. They know better than us that their future will be very different to our past and that they need to be prepared to change jobs or change the ways they work. This need impacts on the type and scope of educational experiences they seek and need to prepare for productive lives.

So there is a potential mismatch between what industry expects of KSTU and what its students expect. The Rector illustrated how formerly distinct skills like expertise in engineering and fluency in the Chinese language were now seen as complementary. Great value is placed on new combinations of skills and individuals with these broader skill sets are in great demand. He also noted as did other panelists and forum participants that these combinations of skills and the value ascribed to them will change over time as supply changes, as technology changes and as aspirations change.

Our third panelist Aida Sagintayeva can offer us some very different perspectives on the question of the existence and nature of a mismatch between employability and skills. Her lenses on this issue included the school or department level as a leader at Nazarbayev University's Graduate School of Education which has a mission of preparing leaders of schools, colleges and universities. How to best prepare them for institutions where governance structures are changing as boards of trustees are being established, new academic standards are being introduced and extensive professional development programmes are being taken up by large numbers of teachers? She also drew on her experience in guiding the Bolashak programme, a national initiative that was created to deal with pressing and strategically significant skill mismatches in the years immediately after independence. One of the many policy conundrums in national scholarship programmes is balancing individual choice and preference, the student determining what skill to acquire with the immediate and pressing employment needs of the national economy or of particular strategic industries or sectors. This yet another perspective on the complex interaction between skill formation and the employability demands of workplaces, industries and the national economy. Dr Sagintayeva's most powerful point was that an individual's employability was as much about values, their personal and professional integrity, their trustworthiness, as it was

about skills and competencies. This resonated with many participants and was a theme touched on in subsequent sessions.

Our fourth panelist was Stavros Yiannouka, Chief Executive of the World Innovation Summit of Education (WISE) based in Qatar. He drew on his experience at Wise and his long involvement with the Lee Kuan Yew of Public Policy at the National University of Singapore to remind that higher education professionals were often unduly critical of their institutions. There is he argued much to be positive about including the contribution higher education makes to the employability of graduates and the more diffuse but strategic role the sector makes through the creation of new knowledge.

There was lively discussion following the panel presentations covering the issues of motivation of young people, the importance of young entrepreneurs and the speed with which occupational structures and the nature of jobs were changing.

To summarize: we have a rich symposium. We began with a global and multinational perspective; we followed it with a national perspective; then an institutional view; and then finally the perspectives on two experts, one looking at the issues of an individual's value or character and one looking across the sector globally.

Concluding observations emphasized the importance of transferable and adaptable skills. Skills of this kind give individuals more choice; they allow them to change employers, change locations, industries and occupations more readily. They act as a safety net, a stock of human capital that can be applied to a variety of productive endeavors.

Lists of these skills abound. Jamil Salmi and Alper Akdeniz offered exemplars in the forum. They were broadly similar but they tended to be couched in static language – problem solving, critical thinking – rather than actively. The emphasis might be better placed on action, on the application of skills. Solving problems, working in teams, resolving conflict, acting with integrity are expressions point to the behavior of the individual. Demonstrating, displaying and using skills and competence is of more importance than holding or possessing a capability or a body of knowledge.

This is a more pertinent and more useful way to look at notions of employability.

A PERSPECTIVE ON FUTURE EMPLOYABILITY

Alper Akdeniz

Ladies and gentlemen, distinguished guests!

First of all I would like to thank the NU and the organizers for inviting me address you today on the theme of Graduate Employability in the 21st century. As one of the major employers in Kazakhstan, this is a theme close to our DNA.

It is indeed a great privilege to be here witnessing the progress made since the inception of the University some five years ago. I vividly recall this as one of the most defining moments of my time in Kazakhstan. This year we will see the first graduates qualifying and looking forward to joining industry and commerce, and contributing to the development of this young and energetic country in many different fields.

I must take the opportunity to congratulate the academic faculty, members of NU and partner universities for achieving a golden milestone this year. I am, and you should all be extremely proud of your achievements and I would like to wish all the students graduating this year and the faculty a successful future.

Our theme for this plenary session; Perceptions of Employability, Skills and Individual aspiration in a diversifying economy, is certainly a very interesting and important topic which deserves reflection. 'The headline Educational challenges for the region are clear - we need quality graduates. We need them motivated and engaged- But in which areas, with which skills?' As an Accountant by background, I find it intuitive to think of business with a balance sheet in mind; assets (or operations) on one hand and Finance on the other (covering Economics and Capital markets). But as esteemed Academics I know that you will need a more robust framework, so, I shall briefly frame my asset and finance thoughts using that most notable academic body - the Nobel Committee to illustrate where I think regional challenges lie. There have been 889 Nobel prizes awarded since 1901; of these 257 have been awarded to the home of Capitalism - the USA - where more than 43 of the American Prizes have been won in the field of Economics and Capital Markets.

By contrast, in the former Soviet region, there have been 27 Laureates. It will come as no surprise to any of you that the vast majority are in physics and sciences. Only 3 former Soviet Union citizens have won a prize for economics – and of these 3, 2 Prize winners were based in Minnesota and at Harvard. This leaves us with one former Soviet Union based laureate - Leonid Kantorovich. His specialism? – The optimal allocation of Resources'. What I would call the asset side of the balance sheet.

To be clear, The Laureate awards suggest that Americans have invested heavily in understanding markets and connectivity, and when measured by resilience they have been amply rewarded for this understanding. The financial, currency and commodity crisis suggests that this Central Asian region needs qualified finance professionals.

If we are to become globally connected in trade, we have a real need for graduates trained in the areas of international economics and capital markets. I sense that, on balance, our region is, as result of a legacy focus on science and physics, well served by mathematicians, engineers and scientists - we need to preserve this, but may I gently suggest that we also need to ensure that graduates enter the areas of economics and capital markets.

In considering the term Employability, as defined by Professor Mantz Yorke: "a set of achievements – skills, understandings and personal attributes – that make graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy". Whilst this may be a neat comprehensive definition for graduates as they seek their initial employment opportunities, I would encourage Graduates

to look at Employability as a life time aspiration, in other words the capacity to earn a living until we decide to stop working. Today a career with one organization for life is no longer the norm.

So, I would like to share with you my thoughts on the key question in front of you as Educators and us as Employers: “What should be considered in developing educational programmes that are fit today for tomorrow’s challenges” I will begin by looking at the future and focus on the megatrends that are expected to shape the future landscape, and their implications for new skills in future. I will then share with you some of my personal observations regarding ‘skills required for long term employability’ based on my experiences from working and living in different countries and continents over the past 30 years including Kazakhstan.

I will follow this with opinions expressed by CEOs in our Annual Global Survey. And finally, I would like to land these thoughts by reflecting on the recent initiative announced by President Nazarbayev; to promote Astana as an International Financial Centre. This vision has importance for the development of relevant skills to meet national goals.

When we scan the horizon, the global landscape is changing rapidly, therefore preparing new generations with the appropriate skills to tackle tomorrow’s challenges requires an appreciation of what the anticipated changes actually mean and how best to reflect these in your educational programmes going forward. Let me share with you some PwC insights on megatrends. We see megatrends as macroeconomic forces that are shaping and reshaping the world. By definition, they are big and include some of society’s biggest challenges – and opportunities. The concept of megatrends is not new. Companies organise their strategies and businesses around these trends. I believe it is equally important for us in this and similar forums to consider the opportunities provided by the megatrends. They guide us in refining the future educational strategies. Ignore them? And we later run the risk of becoming irrelevant to a large part of society. 5 global megatrends as we see them are:

- Megatrend 1 – Demographic shifts
- Megatrend 2 – Shift in global economic power
- Megatrend 3 – Technological breakthroughs
- Megatrend 4 – Climate change and resource scarcity
- Megatrend 5 – Accelerating urbanisation

Megatrend 1 – Demographic shifts

Explosive population growth in some areas against declines in others contributes to everything from shifts in economic power to resource scarcity. Countries have very different demographic trajectories. Some societies are aging rapidly and their workforces will be constrained. Other societies are young and growing which will create even larger labor forces and consumer markets. Accordingly, talent mobility will only become more important in the future as demographic trends create an unequal supply of new workers.

Apart from the economic implications such as health care costs ability to deliver healthcare, shifts in longevity may affect business models, pension costs, and talent goals/ambitions. The workforce may need to be retooled in all parts of the world; in the aging economies older workers will need to learn new skills and work longer.

Megatrend 2 – Shift in global economic power

The focus of global growth has shifted. The developments we see are essentially about a rebalancing of the global economies. A realignment of global economic and business activity is transitioning the populous BRIC and other growth countries from centres of labor and production to consumption – oriented economies. As they become exporters of capital, talent and innovation,

the direction of capital flows will be adjusted. Competition generated from new geographies and sources may create different competitor profiles than those historically faced.

Megatrend 3 – Technological breakthroughs

Breakthroughs in nanotechnology and other frontiers of research and development are increasing productive potential and opening up new investment opportunities. The combination of internet, mobile devices, data analytics, and cloud computing will continue to transform our world. Technology will enable virtual versus physical business and operating models. New competitors will emerge as technology and innovation create new competitive advantages and increase productivity across sectors and geographies. Technology enables far smaller “adoption” gaps between developed and developing countries.

Megatrend 4 – Climate change and resource scarcity

Scarcity of resources and the impact of climate change are of growing economic concern. With a population of 8.3 bn people by 2030, we’ll need 50% more energy, 40% more water and 35% more food. Impacts may include increases in extreme weather and rising sea levels, which could make traditional methods of farming and fishing difficult or impossible in some heavily populated places. New industries will be created, existing ones revolutionized in response to energy scarcity, climate change and lack of resources; the pace of these changes will be accelerated by new technologies.

Megatrend 5 – Accelerating urbanization

In the 1950s less than 30% of the world’s population lived in cities. Currently the proportion is 50% and by 2030, the UN projects that some 4.9bn people, around 60% of the estimated population will be urban dwellers. This trend will accelerate the growth of mega-cities – those with populations of 10 million or over. As mega-cities grow, megaprojects will be required to build city infrastructure, support new trade flows (airports, sea ports), to address education, health, security and employment demands, etc. With urbanisation, comes increased “connectivity”, it is this “hub connectivity” theme identified as important by President Nursultan Nazarbayev.

So what are some of the key implications of megatrends that we should all be reflecting in our plans going forward:

1. Growing talent shortages whilst increasing talent mobility
2. Potential of retooling “grey workers” to extend their Employability (offsets demographic costs of ageing).
3. New skills and technologies to cater for aging populations
4. New skills to be developed to manage the sustainability as megacities put pressure on scarce resources and supply chains.
5. New geographies and technological breakthroughs opening new consumer markets and virtual business models.

In summary, megatrends need to be reflected in the strategy of Educational Institutions as they develop relevant programmes for the next generations. I have come across a good example of what I mean; one University with an “Employability Strategy Group” addressing the question as – ‘Engage in horizon scanning to anticipate and prepare for new opportunities and likely future developments that relate to student employability and graduate attributes’. – This is The University of Edinburgh in 2015. I would welcome and encourage Universities in Kazakhstan and Trustees of Universities to scan the horizons and raise similar questions looking at the future in a proactive way.

Let me now move from macro picture to more practicable observations based on my first-hand experiences over the years: “Transferable skills”, in my view this is relevant wherever you are. These skills are not specific to a particular path but generic that can be applied across disciplines and sectors and they are fundamental. Employability in my view requires “long term fitness” – the programme which includes basic tenets that need to be developed, kept sharp and agile and nurtured along the way.

I will mention some of the attributes of our own fitness programme; the critical 6 Cs:

- Communication
- Cultural awareness
- Critical thinking
- Collaboration
- Conflict resolution
- Creativity

In my view, all of these underpin the basic skills that are needed to secure long term Employability. My basic premise is that specific skills are indeed important to gain employability, but this should not be regarded as a one off event. The base skill is simply your foundation to build on for life. Skill sets that offer employment opportunities at the outset will need to be developed, expanded further during the course of one’s career and the transferable skills that I mentioned help to accelerate personal growth, faster integration capability with other cultures and advancement in the career progression. Developing skills for employability only would be a narrow and shortsighted view and unlikely to be fulfilling in the long run.

Let me now share with you the key messages from our Annual Global CEO Survey, we asked CEOs what capabilities tomorrow’s leaders will need to succeed in this evolving business environment. According to their responses, the CEO of tomorrow will need to possess the following skills:

1. An ability to see around corners - a number of CEOs mentioned the need to identify trends early and stay ahead of the fast-moving competitive landscape.
2. Tolerance for ambiguity - many said tomorrow’s leaders need a constant readiness for changing business dynamics and an ability to work towards unclear goals and outcomes.
3. Agility in decision-making - being flexible-minded and a curious life-long learner who’s open to testing and measuring new ways of doing things was the message from many others.
4. Adaptability in execution - the most often-mentioned response was adaptability – the power to drive nearconstant renewal inside their organization.
5. At ease with technology - CEOs told us that technology plays an important role - both as an accelerator of change, and as the key tool at their disposal to remain agile, to adapt to changing circumstances, and to stay close to consumers and influencers.
6. Surrounded by a great team - CEOs must have talented staff in place to compete in the marketplace. The ability to attract great people was one aspect, but being able to cultivate a positive culture with a happy workforce, centred around trust with staff.

The seventh capability was a bit of a surprise and mentioned by a good number of CEOs from across geographies and sectors - and that was ‘humility’. The CEOs naming this capability said it was important to maintain a modest opinion of your own importance and be open to listening and learning from all that’s happening in the global environment. And, of course, humility highlights the importance of CEOs knowing the limits of their own ‘superpowers’.

I will close my remarks by reflecting on your role as Educators in the context of Central Asia – after all, if your Educational establishments are not planning activities to address local concerns and ambitions, it is hard to see alignment and relevance in the long run. Last month at the Astana Economic Forum, the President Nazarbayev announced plans to introduce International Financial centre in Astana leveraging the infrastructure for Expo 2017.

As I noted earlier, realising this vision will require trained financial economists being added to the deep scientific and engineering skills pool of Kazakhstan. The international centre is envisaged based on Dubai International Financial centre (DIFC) which has been successfully operating for the past decade. In DIFC you will find 22 of top 30 worlds top banks, 7 of 10 top law firms, 6 of top 10 insurance companies. More than 1000+ (from 19 in 2004, to 1000+ in 2014) registered companies - 300+ Financial service companies, 145+ retail companies, 560+ Non-financial services firms. There are a number of critical success factors for international financial centres, including but not limited to:

- Enforcement of law;
- Independent regulation;
- Common legal framework;
- Supportive infrastructure; and its
- Tax-friendly regime.

All success factors need to be worked through diligently by the local talent cooperating closely with international expertise. A quick glance at the Dubai model indicates that the financial centre provides employment to more than 17.000 people (2004 – 75, to more than 17000 in 2015), qualified and talented specialists from different parts of the world, including accountants, lawyers, judges, actuaries, financial advisors, technology experts etc.

Establishing a global financial centre is a highly ambitious and a bold move and if successful it will provide Kazakhstan and the region with a unique opportunity to power future growth. I would like to remind those who looked at the NU concept of bringing the best educational partners from around the world with a level of skepticism five years ago, you now see a dream realized despite head winds from one of the worst and most persistent of negative economic conditions. The idea of an International Financial hub is an ambitious but a visionary goal; I am confident in you, having witnessed ample examples of successful execution of similarly ambitious goals over the past 2 decades of independence in Kazakhstan.

Looking at it from the perspective of skills required, Astana International Financial Centre initiative clearly signals a new path which offers tremendous opportunities. Over the next decade, the education, training and development of local capabilities matching international expectations require fast track skill building. Local universities along with financial and professional institutions such as ours will be called upon to contribute. Collaboration between government, educational establishments and the private sector institutions will - as always - be critical for a successful outcome.

DEVELOPMENT OF NATIONAL QUALIFICATION SYSTEM BASED ON EDUCATION SPHERE AND LABOUR MARKET INTERFACE

Arstan Gazaliyev & Yuri Pak

Abstract

This paper discusses issues of developing national and branch frameworks of qualifications. It provides ways of overcoming the existing gap between requirements of the labour market and employee's competences. It also provides a definition of the national system of qualifications and the branch system of qualifications and labour functions. It also offers requirements to developing professional standards and shows their importance for forming a university graduate's competence-based model. A professional standard should be considered as the backbone document for the development of educational programmes aimed at the formation of the key competences providing the demand for graduates in the labour market throughout the life.

Introduction

In the present day society there take place global transformations caused by the changing structure of economy and the increasing demand for qualified labour. The growing requirements to the level of training from the sphere of work often do not match professional competences of experts. There is observed the qualitative gap between the labour supply and demand. Qualification of workers does not completely satisfy employers, and the education system continues to develop in the independent logic which is not interfaced to the requirements of the labour market. The main causes of it are backwardness of the National system of qualifications and feeble interaction of the sphere of work and the education system.

The task of developing the National system of qualifications was defined by the President of the Republic of Kazakhstan Nursultan Nazarbayev in his article "Social upgrade of Kazakhstan: twenty steps to the society of universal labour". The President indicated the need "to stimulate the entire work" for the development of the National system of qualifications (NSQ) which has not only a normative value but is in fact the 'road map' for each profession". The NSQ will permit "to construct professional elevators for each specialty".

Analysis

When developing the National system of qualifications it is necessary to make good use of international experience. It is necessary to reject the national isolation, to analyze the best practice of forming professional standards and their conjugation to educational standards. The system of qualifications existing nowadays does not reflect the employee's competence, one's ability to solve functional problems and to bear responsibility. Educational standards are not oriented at the formation of professional competences. In educational programmes of a bachelor's degree theoretical training prevails over practice. In the Republic of Kazakhstan, there is no monitoring system or evaluation of expert's professional competences. There are unresolved issues of qualifications' comparability and their recognition. The acting system of qualifications assignment based on the input parameters is inadequate to the requirements of the labour market. The existing gap between the requirements of the labour market and worker's competences and mismatch of qualifications to these requirements arouse employers' mistrust.

The resolution of the Government of the Republic of Kazakhstan No. 616 of 18.06.2013 approved the Plan of incremental development of the National system of qualifications including the National frame of qualifications, branch frames of qualifications, professional standards and the system of qualification confirmation.

The National system of qualifications is a set of mechanisms of legal and institutional regulation of supply and demand for expert's qualifications from the labour market.

The National frame of qualifications (NFQ) of the Republic of Kazakhstan representing a structured description of the qualification levels recognized in the labour market was developed taking into account the European frame of qualifications, it contains eight qualification levels. The NFQ defines a uniform scale of qualification levels for the development of the branch frames of qualifications and professional standards, providing inter-industry comparability of qualifications, and is the basis for the system of confirming compliance and assignment of experts' qualification. The principles of the National frame of qualifications development are: continuity, eligibility and sequential increasing the requirements to workers' competences, abilities and knowledge. They define the quality level and results of the executed activities. They are referred to the characteristics concretizing these or those worker's competences in his professional activity. The main criteria of assessing the competences of each qualification level are the degrees of independence, responsibility and complexity of the performed work.

The basis of professional activity is made by the worker's professional competences causing his adaptation to the changing situation in the society and in the labour market. Qualifications and competences are the result of acquiring by a person of a certain educational programme and professional practical experience.

The RK National frame of qualifications was approved in September, 2012, and in January, 2014 there were introduced some substitutions in its structure:

- "requirements to knowledge" for "knowledge";
- "requirements to abilities" for "abilities and skills";
- "requirements to labour functions" for "personal and professional competences".

The change in the part of substitution of "personal and professional competences" by "requirements to labour functions" does not meet the requirements of the State standard of higher education approved by the resolution of the Republic of Kazakhstan's Government of August 23, 2012 No. 1080 which endorses the development of special competences based on professional standards.

The Branch Frames of Qualifications (BFQ) represent a structured description of the qualification levels recognized in a branch. The BFQ classify the requirements to qualification levels depending on the complexity of the performed works and the nature of the used knowledge, abilities and competences. The branch frames of qualifications are developed in a specific branch of economic activity on the basis of the National frame of qualifications.

Introducing modification in the National frame regarding the requirements, namely to abilities and to labour functions, led to mismatch with the developed branch frames in which there are shown the requirements to skills, to personal and professional competences.

According to the Kazakhstan information-and-legal system of regulations "Adilet", there were approved 20 branch frames of qualifications, among them 12 Branch frames in the group of specialties "Technical Science and Technologies" in the following fields: "Geology"; "Metallurgy"; "Civil engineering"; "Light industry"; "Power industry"; "Information-communication technologies"; "Transport and communications"; "Mechanical engineering"; "Chemical production"; "Oil and gas branch"; "Geodesy and cartography, land management and cadaster"; "Construction and housing and communal services".

The analysis of the approved branch frames of qualification and their comparison to the NFQ shows that the requirements to knowledge in the BFQ practically duplicate the requirements to knowledge designated in the NFQ. Such coincidence needs to be considered as inability, when forming the BFQ, to consider specifics of a branch that will naturally be reflected negatively

in the formation of professional standards and in subsequent educational programmes in the competence-based approach format.

In the NFQ there are described the requirements to abilities, and in the BFQ the requirements to skills and abilities. On the whole the statements of the requirements have a general character, there is no reality considering the features of a branch.

In the Branch frame there take place the requirements to personal and professional competences though in the National frame there are defined the requirements to labour functions.

If to accept that the concept “competence” means the expert’s ability to apply his knowledge, abilities and personal qualities to successful work, it is possible to consider these requirements comparably equivalent.

The basic feature of the requirements to competences of the Branch frame is that for each qualification level competences are evaluated by the main criteria: levels of independence, responsibility and complexity of the performed work. In the description of the criteria for different qualification levels there are no accurate requirements for different areas of professional activity.

A feeble place of the approved frames of qualification is the absence of the criteria requirements directly connected to professional activity. The requirements for the level of responsibility and complexity of the performed work are formulated by the general frame recommendations of such a type: responsibility for enhancing the own work, planning, developing and results of the processes of activity, the observance of the technical operation rules and security regulation.

The development of the National system of qualifications assumes the logically built correlation of the Branch frames of qualification with the requirements of the National frame of qualifications. Without such correlation it is impossible to develop quality professional standards.

The Head of State, Nursultan Nazarbayev noted: “One of the most important moments in the forming National system of qualifications is that professional standards developed within the NFQ shall become a reference point for the educational standards used at educational institutions in training specialists. There shall not be a gap between professional and educational standards”.

Professional standards shall become the “road map” for each profession. Professional and educational standards need to be focused on professional competences.

A professional standard that is a multifunction normative document shall become the basis for:

- the development of uniform requirements to the content of professional activity, updating the qualification requirements;
- the formation of educational standards and programmes of all levels of professional education;
- the assessment of professional readiness and confirmation of the expert’s qualification compliance.

Professional standards shall be developed on the basis of the framework of qualifications that is a kind of instrument of interfacing the sphere of work and the education system.

The process of the professional standard development shall be preceded by the analysis of work carried out for identifying the functions and requirements to the quality of their performance (in terms of knowledge, abilities and wide competences including the level of responsibility and independence) by workers of various skill levels and official hierarchy.

On the basis of the analysis of professional standards developed in Kazakhstan it is possible to note:

- in the majority of professional standards there are no qualification levels providing the existence of higher and postgraduate education. This circumstance limits the possibilities of higher school in the formation of practice-focused educational programmes in the competence-based approach format;

- there is absent the most essential component of qualification requirements: “personal and professional competences”. This gap in total with the absence of elements of independence, responsibility and complexity of the performed work makes such professional standards of little use for the improvement of educational programmes of higher education;
- very often “skills and abilities” in professional standards are stated in the generalized, non-constructive format, they copy the BFQ and do not reflect professional specifics;
- in a number of professional standards there is provided an incomplete list of labour functions, therefore they turned into duty regulations;
- the requirements of the qualification levels assuming the existence of higher education are, as a rule, underestimated.

On the whole the developed professional standards are not completely harmonized with the framework of qualifications. Professional standards were developed quickly in the conditions of uncoordinated actions of the ministries and departments, imbalance of legal materials and standard and methodological recommendations on their development.

It is obvious that professional standards need, first of all, to be developed in those trajectories of training where there is observed high mobility of staffs. The market through the mechanism of professional standards defines the requirements to graduates, and the education system through educational standards, curricula and programmes forms the content of educational programmes adequate to the competence-based model of a graduate. In the Concept of continuous education the transition from the management of professions to the management of professional qualifications is very important. This problem is solved with the help of professional standards permitting to open the experts’ professional activity according to the structure of the technological process and continuity of activity at various qualification levels in combination with the requirements to knowledge, abilities and competences. On the basis of professional standards and requirements of the real sector of economy there shall be formed the educational policy of the country and the system of experts certification. Professional and educational standards providing interrelation between vocational training and the requirements of the changing economy shall become the kernel of the National system of qualifications. The development of social partnership (higher education institution – business) shall become a strategic direction of training qualitative experts on the basis of the rational use of standards with pronounced professional competences.

The Memorandum of cooperation between the MES, the Ministry of Labour and the National Chamber of Businessmen signed on April 30, 2014 contains proposals for the introduction of new mechanisms of joint partner activity for high-quality training of demanded technical specialists for the industrial and innovative development of Kazakhstan. In the scale of the country and its regions it is necessary to adjust the monitoring of productivity of the higher education system:

- graduates employment in the aspect of the training trajectory;
- employers’ satisfaction with the quality of specialists training;
- training compliance to the requirements of innovative economy;
- the efficiency of higher education institutions from the point of view of demand for graduates;
- the state order for training specialists compliance to the requirements of the labour market.

Education is a mirror where there are reflected all the sides of the Kazakhstan society with its mentality, national features and traditions. In higher education of Kazakhstan there are sharply manifested contradictions between: the increasing volume of information knowledge and the limited term of training; the ratio of the share of general education and special disciplines; the level of natural-science and vocational training; the ratio of the share of the core and institutional

components; the principle of unification and preservation of the educational system national features. The SES autonomous format with the volume variable component of the institutional component permits to consider reasonably and quickly the regional and branch features when designing educational programmes of higher education. It is necessary to pay attention on the fact that professional standards are mainly directed to the solution of the business problems corresponding to the present level of the development of production and economy. Therefore the problems of fundamental character and the system of education pass to the background, and as a result, the revaluation of the professional standards role in the solution of educational problems can lead to decreasing the education quality. It is difficult to disagree with this statement. It brings up to date the need of attracting as developers of professional standards not only professional experts in a certain branch of production but also representatives of the university system capable in the advancing plan to designate innovative aspects of the graduate's competence-based model.

Employers are not experts in education, they show in the professional standards what the worker must know and be able when he comes to perform the work within this or that profession. In fact, an employer specifies only that applied aspect of knowledge and abilities of a worker which, in opinion and experience of the employer, is necessary for performing concrete work and functions. And what is necessary for being able to possess this knowledge and abilities is the question for education. It is the sphere of education that is to solve what and in what sequence to study.

The problem of improving educational standards and educational programmes interfaced with requirements of professional standards should be dealt with not only on the level of higher learning but also on the level of the labour market. Today the share of employers in training does not exceed 1% while this indicator in the developed countries is at the level of 30%. The development of the National system of qualifications in the RK obliges the parity participation of the interested parties (the sphere of work and the education system) in the formation of the expert's qualification characteristic in the format of competences.

In Kazakhstan not every employer can accurately suggest and formulate recommendations to higher education institutions. A considerable part is focused only on the solution of tactical production tasks. Fewer large enterprises have a perspective strategy of the development and can make a real request for the demanded specialties and qualified graduate. It is impossible to be guided completely and unconditionally by momentary (tactical) inquiries of production (the regional labour market). The gap that exists nowadays between the higher education sector and the practice-focused activity of graduates needs to be resolved on the basis of the development of the national system of qualifications and professional standards developed in the community of professional associations and higher education institutions. Various vectors of interests of the higher education system and the sphere of work generates inadequacy of the structure and quality of training young specialists to the requirements of economy. In these circumstances the higher education sector is generally guided by the needs of entrants (their parents) who are customers of educational services. It promotes the emergence of imbalance between deficiency of graduates in a number of training trajectories and their surplus in specialties which are not in demand at the labour market.

The mass campaign for the development of professional standards (by 2018 there will be developed about 1 000 professional standards) should not turn into the imitation of innovative processes, the next propaganda stage of the reform. It is important that it became a platform for social dialogue for interfacing the requirements of the sphere of work and the education system.

A professional standard should be considered as the backbone document for the development of educational programmes aimed at the formation of the key competences providing the demand for graduates in the labour market throughout the life.

Conclusion

Ideally the qualification requirements to experts of certain levels and the list of knowledge, abilities, skills and key competences projected in professional standards shall be interfaced with educational purposes and learning outcomes.

The development of professional standards is a peculiar consensus between professional associations of employers and the university community. Only professional standards accepted on the basis of the network interaction of professional associations of employers and the academic public of higher education institutions can become an innovative basis for updating educational standards of higher education and the reference point of the personnel policy for successful implementation of the State programme of industrial and innovative development.

UNDERSTANDING THE ROLE OF FUNDAMENTAL VALUES IN SERVING A LARGER PURPOSE

Aida Sagintayeva

Dear participants of the Eurasian Forum, dear keynote speaker and panelists,

At the end of the first day of the Forum, I hope we may come to an agreement that employability is an increasingly relevant performance indicator for universities. Traditionally the expectation has been that universities will develop the skills of students - particularly technical skills and 'soft skills'. Supporting Jamil's statement, I want to suggest that skills are no longer enough.

As technology changes ever more rapidly, as more graduates are being produced and there is more competition for jobs, universities that want to enable their students to be most employable in a sustainable way should pay more attention to the fundamental values which they are enabling their students to inculcate.

Apart from acquiring technical knowledge, fundamental values such as integrity, dedication and trust (between the employer and employee) are also important. Employers would usually seek those graduates who are professionally committed to what they do. Indeed, you may strive to become a very ambitious engineer but the lack of professional and personal values could cause an employer to doubt if you were really fit for their company.

The role of personal values and soft skills is also becoming increasingly important in the context of internationalization and academic mobility. As graduates, today's students will shape the world of the future as economic beings (professionals) and as social and human beings. Their actions and decisions in the workplace, in their local community, in their lives will have an impact on others and be influenced by the breadth and depth of their knowledge about the world, their skills in relating to others and their values (Leask, 2015). Values such as integrity, teamwork and responsibility are most likely to be appreciated in different social contexts. Graduates should be ready for professional and social mobility. Globalization penetrated every aspect of our lives, which erased borders allowing resources as well as human resources travel all over the world, and employers to hire globally. In such international workplaces graduates should have global competencies and fundamental values that enable them to work in synergy. Thus, development of fundamental values should be given more attention across both secondary and higher education.

Evidence from employers says that we can train people to cover skills gaps and help people gain experience, but it is essential that employees arrive with well-developed and appropriate values. Different authors define different sets of values that employers usually seek in graduates. These are usefully summed up in a set of five main fundamental values: dedication, integrity, accountability, collaboration and conduct.

Speaking from my professional experience, I have seen graduates that were not sure if their major choice was based on their personal aspirations rather than salary prospects. One may argue with me here that salary is an essential element of human life but my case is that to serve a larger purpose is as important as private good. Motivation theorists suggest that intrinsically motivated individuals, those who are driven by an interest or enjoyment of the task itself have long lasting and self-sustaining motivation rather than external motivation that relies on external pressures or rewards, such as salary. (Ryan and Deci, 2000). Intrinsically motivated employees are more likely to engage in the task willingly as well as work to improve their skills, which will increase their capabilities.

I have also seen graduates that could not focus on the development of their professional skills as they have not found their inner voice of professionalism. I think universities should look out for such students and help them to develop their professional identity and awareness of what they want to become in the rapidly changing world.

Unfortunately, the reality is quite different. It is quite a challenge for educators to design academic programmes and provide learning experiences that inculcate values that help students to become well-rounded and confident students. Interestingly, according to the Gallup survey held in the US, 64% of respondents strongly agree that goal setting should be taught at schools, while 61% strongly agree schools should know how to motivate students. A majority also strongly agree that things like creativity and collaboration are also meaningful teacher targets (Lopez and Calderon, 2013).

It is also worth noting that according to one of the local Kazakhstan-based recruitment companies that made a content analysis of 16 000 vacancy announcements, employers would appreciate workers that demonstrate the following values and qualities: a good sense of responsibility; creativity and seeing one's work as a 'meaningful' job; communication skills and punctuality (HeadHunter, 2015).

To sum up, it is important for higher education leaders to make sure that students live with values which are fit for the future and help them become well-rounded personalities as well as serve a larger purpose.

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CREATING EMPLOYABILITY

Loretta O'Donnell

Employability is a process requiring commitment from three main entities: the individual, universities and employers.

Universities are increasingly aware that graduate employment is a critical measure of success, scrutinized by students, graduates, parents and employers. In this context, graduate employment incorporates students who become entrepreneurs as well as those who join professional firms or engage in further study. Some accreditation agencies require that universities seeking accreditation provide data on employability, as measured by salaries of graduates three months after graduation, as an indirect measure of quality (Hunt, 2015). This data is considered as complementary to more direct quality indicators such as programme design, assurance of learning and faculty qualifications (Kelley, Chong and Toi, 2010).

Prominent researchers (Defillippi and Arthur, 1994; Ghoshal et al., 1999; Baruch, 2001) believe that employers should focus on creating workplace conditions which maximize *employability*. Employability is defined as “having the capability to gain initial employment, maintain employment and obtain new employment if required” (Hillage and Pollard, 1998).

Even though employees are considered as the key strategic asset within organisations, especially within the knowledge economy (Fulmer and Ployhart, 2014), in developed economies, guaranteed lifetime employment has largely been replaced by the notion of the flexible workforce. Individuals may engage with their employer through short term contracts, part time work, work from home, virtual team work, work on commission and a range of other alternatives. These varieties of modes of engagement require employers and employees to be agile, creative, curious, and entrepreneurial and to have integrity. These attributes need to be actively developed by universities.

Nearly four hundred students graduated at our first graduation ceremony in June, 2015. Assuming an average age of 22, and the likelihood of a life span of 82 years, and a potential retirement age of 72, our students will have a fifty year career span until they retire in 2065. Some of them may be working professionally beyond 2070. Our current Foundation Year students may be in the workforce until 2075. This prompts the question: “How do employers and universities work together to create opportunities for students to be successful not only next year but also in 2050, 2060 and 2070?” In other words, how can individuals “outperform their potential” (Sander, 2015) over the lifecycle of their career?.

Researchers such as De Fillippi and Arthur (1994) remind us that our students are likely to have *boundaryless careers*. Careers which were once clear and static are likely to be blurred due to technology, economic and social changes. Careers have become “more open, more diverse and less structured and controlled by employers. The management of such careers require individual qualities that differ considerably from those that were sufficient in the past” (p. 61).

Because of this complexity, it is not surprising that the careers literature is replete with a range of metaphors, which take us well beyond the traditional concept of the “career ladder”. Baruch (2004) uses the metaphor of the *career landscape* as a way to reframe the career ladder. He believes that the *linear* or ladder model of careers is similar to mountain climbing: there is only one summit. Many individuals reach a career plateau and fail to reach the summit. This model implies that there are winners and losers. It implies there is one way to be promoted and to be successful and that is through a rigid hierarchy. The career path is established for the climber. There is only one mountain and there are clear external definitions of success.

He contrasts this with the *multi-directional* career model, which infers that the individual can have a metaphorical experience similar to a climber who can choose to climb a particular mountain, or choose another mountain, or walk over hills or wander along the plains and plateaus.

In this model, success is defined by the individual, not by the organization, and not by government or society. Individuals navigate their own career. They create new paths and select their own directions, based on their own personal development preferences and individual definitions of career success.

This career landscape view is comparable to the *protean career* (Hall, 2004). Proteus was a Greek god who could change shape at will. The protean career is one in which the individual changes to suit the environment. Alternatively, the individual potentially changes their environment to suit their changing career needs. Protean careers are managed by the individual, not the organization. Not surprisingly, this approach to career management is positively related to a high level of agency or proactivity and a high tolerance for ambiguity (Briscoe, et.al. 2006). These attributes are valuable for students and for employers within a changing labour market.

Other contemporary concepts include universities and employers developing “ecosystems” in which all different players make a contribution towards employability (Sanders, 2015).

What are the implications of this for universities and for employers?

Firstly, universities need to ensure that students are embedded in rich, immersive learning experiences, which help them to build a bridge to their professional lives. Universities need to be explicit about defining and developing career-oriented graduate attributes. One illustration is seen in the graduate attributes of Nazarbayev University:

“The graduates of our programmes will demonstrate the following eight attributes, the achievement of which will prepare them for local, national and international leadership roles:

1. Possess an in-depth and sophisticated understanding of their domain of study.
2. Be intellectually agile, curious, creative and open-minded.
3. Be thoughtful decision-makers who know how to involve others.
4. Be entrepreneurial, self-propelling and able to create new opportunities.
5. Be fluent and nuanced communicators across languages and cultures.
6. Be cultured and tolerant citizens of the world.
7. Demonstrate high personal integrity.
8. Be prepared to take a leading role in the development of their country.” (Nazarbayev University Learning and Teaching Strategy, 2015).

Secondly, in practical terms, Hoekstra and Crocker (2015) found that academic faculty use several techniques to help them to reflect on their own practices as educators striving to build employability capabilities in students. Universities increasingly develop industry advisory boards and listen to their advice on curriculum. Students engage in paid and unpaid internships, locally and internationally and then systematically reflect on their internship experiences. Students and faculty engage in community work as volunteers and transfer their skills to their academic environments, so that everyone is better for the experience. Some disciplines employ professors of practice, such as in Medicine, Engineering or Business, so that students hear real world experiences first hand. This allows students to build bridges between theory and practice and to critique both. Other disciplines which are less focused on specific professions, such as philosophy, literature and sociology are increasingly aware that students are keen to develop skills, knowledge and attributes which will place them in a “winning game” in their professional lives.

Thirdly, for employers, investing in their people is essential, especially in their ongoing employability. As graduates enter the workforce, they and their employers benefit from access to learning opportunities – learning from peers, from competitors and from ongoing research

in their fields and in related fields. This investment pays dividends, both metaphorically and literally (Bassi and McMurrer, 2008).

In summary, individuals can create unique definitions of career success and navigate their own career paths according to their own preferences. Universities can clarify the graduate attributes required for success in a multi-directional, non-linear and protean work environment and then embed those attributes in all academic activities. Employers can focus on developing employees through investing in myriad learning experiences for their employees, generating tangible and intangible benefits for both the individual and the organisation. Employability is enhanced when individuals, universities and employers work interdependently to achieve common aims.

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TRANSFORMING TERTIARY EDUCATION FOR INNOVATION AND COMPETITIVENESS: UNIVERSITY OF CENTRAL ASIA

Shamsh Kassim-Lakha

I would like to, first of all, thank Nazarbayev University for inviting me to address this gathering. Loretta, thank you for your very generous introduction. I feel at this moment like a very happy midwife, particularly as my co-midwife, who is Jamil Salmi, in fact, he was the obstetrician and I was the midwife at the birth of this university. We are so happy to see that you are having your first graduation. I want to congratulate the President. I want to congratulate Aslan Sarinzhapov and Kadisha Dairova for their leadership, with whom we have such a pleasure to work. This was a remarkable team of people, who made it happen and the evidence is all here. Again, good wishes to you as you move to the next level of your development.

My presentation basically will follow the outline. Why should universities respond to the job market? What are the implications for future jobs and higher education? Higher education in Central Asia and the market demand. This is of course where we are and we must focus on this area. And I would like to present the case of the University of Central Asia as an example of how we have tried to respond or are proposing to respond to this challenge.

So why should universities respond to the job market? Look. We all know that universities are no longer acceptable as ivory towers and we are responsible for teaching students and developing faculty and researchers to increase knowledge that is given. Our prime customers – graduates and their families – judge the value of the university degree by the success it brings to the graduate and not necessarily by how many research papers were written in the “Nature” or this or that journal. We accept the job to educate our constituencies but I will come to this in a minute. In most societies, success for graduates means jobs. In fact, when we were planning my university, most recent one – the University of Central Asia, we often heard that success equals jobs. That is the way the stakeholders out there look at us. As we look at what happens and how should universities respond, let us just look at the mega picture, which is shifting the centre of economic gravity from the West to the East. A longer-term forecast by the OECD suggests that today developing and emerging countries are contributing 40% but by 2030, they will contribute 51% and 57% of the GDP of the world by 2050. My sense is that it will be faster than what we have seen. These forecasts have been proven slower than we have seen in the past. The question is “What are the implications for emerging economies?” I know the implications for developed industrialised economies. The implications for the developing and emerging economies are even bigger. There is a shift in demand for skills in emerging economies and this will increase substantially from the call centre type of skills to greater needs for skills for sophisticated services, R&D, industrial R&D that delivers cross benefits. You can see so many designer shops moved to China and to other parts of the East. Yesterday Professor Lauder’s presentation highlighted that point quite well. But it is doubtful if emerging economies will be ready for this opportunity. It is not doubtful. I am convinced that they will not be ready.

Can we plan for the jobs for tomorrow? Now Sony Corporation notes that top ten jobs in demand in 2010 did not exist just six years before that. Those jobs did not exist. The Department of Labour at the US government estimates that today’s learners will have ten to fourteen jobs by the age of 38. Somebody joining Grade 1 is going to have ten to fourteen jobs by the time they finish their career. Welcome to those of us who will be in academia moving along in one stream.

With rapid growth of knowledge, making mastering of any subject is difficult and renders knowledge obsolete. In fact, in ten years half of what one learns at university will be obsolete. Someone may say it will be in less than ten years. So what should be done? I wish there was a

seminar to hear what can be done. We must teach for jobs that do not exist today. We heard this expression before. Using technologies that have not been invented today. Solving problems we do not know of today. And, therefore, we cannot anticipate the future, we cannot create jobs for the people for the future, but we can prepare for that change. Cannot anticipate the future but we can prepare for it. This is the most important take away, one of the most important take aways of my presentation. I want us – the academic world – also realise that there is no formula. Very often we are so focused on our own subjects and our own formulas. We are really challenged to rethink that premise. However, today most higher education institutions prepare students for jobs that exist today or in the past. Always young people come to us and say, “What should I do? What is the big demand? The stock market is rising so I must get into business.” I heard this from many-many people whenever I interacted with young people. Or “The stock market is going down so I must not go into business.”

Most universities prepare for hard skills, subject specialisations. Soft skills, which are really fostered by liberal arts, humanities, arts, sciences, they foster analytical and critical thinking skills. Again, this is a very-very important point. I do not have to tell the audience what it means. I am just reminding ourselves that this is the key. Consequently, most graduates in emerging economies are educated unemployables. They are educated but unemployables. This is a paradox. Or is it? We are educating them to be unemployable. Can systems of education deliver? The answer you all know is that it is not the case. The effect is that most education systems around the world are not capable of meeting future expectations. We are too much into ourselves. Central Asian education systems are no exception. In fact, they are probably at the lower end of the curve.

Let us look at the case of Central Asia. Why do I make such a statement? Economic transition from the Soviet system has been a painful and agonising experience. I think we often write off the Soviet Union and say that it was then. The reality is that they had a very powerful education system. They did a very good job of educating and had a literacy rate in all parts of the Soviet Union ranges up to 98%. Somewhere it was 100%. I think those folks who do not come from this region very often dismiss it. I think it is a big mistake. It is a very big mistake. We would not have all these scholars sitting here if it was not for the Soviet system. I think we ought to give our respect for that system. There are areas in which that system did not work out, economic, for example, but an education side – they have something to teach. That was a very agonising situation for those who live in Central Asia, for the governments of Central Asia. To improve the quality life, Central Asia will need many years of high rates of economic growth driven by private sector. I have to say that Kazakhstan, which is in this conference, is somewhat of an exception because they have taken education as a high priority. This is an example of a role model institution to which others can benchmark or at least try to aspire and it will prepare teachers for the future. I do not see many institutions, hardly any institutions that are the benchmark institutions in Central Asia. For this, of course, beside the economic growth, it will only come if you have the HR – human resources, which is the key. Central Asia after independence has experienced a booming university development, a populist response to the demand of young people who were coming out in growing numbers. The number of students in higher education increased by 2.8 times in Kazakhstan, 4.3 times in Kyrgyzstan and 1.8 times in Tajikistan in a matter of 1992 to 2012, in twenty years. This was a huge increase. If you saw this kind of an increase in North America or Western Europe, the system could not cope, the system would collapse. Here it is somehow ambling along. The period was also characterised by the appearance and fast growth of private universities because the state universities could not cope, they opened up the shop for private universities. Unfortunately, while there are some good universities in the private sector, I would say my ten-fifteen-year experience in Central Asia indicates that there are very few outstanding private universities. They often also are fly-by-night types. I am sorry to say this, which is really a signal and request to the Governments of Central Asia that their quality assurance programmes and their abilities to charter new universities have an issue. However, the increased enrollment

did not address market needs. The point we have been struggling with since yesterday. Enroll them and they will be educated and then they will be unemployables.

Let us take the case of Kyrgyzstan. Just one country. It spends 6.8% of its GDP on education. 6.8. Wow! Wait a minute. It is higher than Hong Kong, it is higher Singapore. It is higher than in Sweden, Norway, Belgium and Finland. Wow! Of course, the GDP is not the size of that in Sweden. It is small. Its population is only six million people. To spend that kind of money – this is an applaud. Wait a minute. The education system is seriously failing to meet the needs of the economy. Rather, it is meeting the needs and aspirations of the population. How many times have we heard this? How many times have we thought and written about this? We are responding to the needs of the people rather than economy and the market. Continuing with Kyrgyzstan. Look at this. Education attainments in Maths and Sciences are among the lowest in the world. Very low. You saw yesterday, Jamil or somebody explained a chart there. Poor performance in Maths and Science means what? It is a snowballing effect and a negative effect on students' choices in disciplines. They go for easier to get a degree. Students have gone for softer choices and away from science and technologies that bring innovation and economic growth and consequently there is a huge gap between preparation of university graduates and the market needs.

An example of the mining industry in Kyrgyzstan. Mining produces anything between 20-30% of the total GDP of Kyrgyzstan. One industry that can make or break the budget. What are they doing about it? In the next few years, the forecast, this is by the Government, I have a document full of figures, they require over 11,000 people in core mining professions to expand gold production. They are producing gold – it is not iron, it is easily marketable. However, in the statistics we have for four years between 2008 and 2012, Kyrgyz universities graduated only eight geo-ecologists and sixty geological exploration technologists. This means that less than two ecologists a year and maybe twelve or fifteen a year for other key professions required. Wait a minute. What else did they do? They produced 18,000 lawyers and by the way doubled the number of economists for the same period. This is the source of my statistics – the Kyrgyz government report on the mining industry as late as 2014 and the National Statistical Committee of the Kyrgyz Republic. Now, if there was one slide I wanted you to take home which is the essence of this seminar, this is it. Say no more. Now, the absence of skilled workforce is of course is a break on the growth. University education is not enough. We think we are the saviors – we are not. We are only the tip of the iceberg. It is like the icing that makes the cake look good. We are higher education but that icing means nothing if there is no meat or no cake underneath. What does it mean? Adult training and retraining which is highly developed in advanced economies is virtually absent in Central Asia. This also means training of university graduates, not just TVET. The urgent need, therefore, in Central Asia is for the higher education reform. We heard the Minister speak about the reform. Let us just dwell on it for a minute.

What do these reforms mean? I used to be a Minister of Education in Pakistan and of Science and Technology. I took on the responsibility for reforming the higher education of Pakistan and creating the higher education commission. It changed the whole situation. Do you know who were the people unwilling to change? Faculty members and rectors of universities. Jamil mentioned that you would not be able to change the curriculum. It is easier to change a graveyard than the curriculum of the universities because the occupants are not willing to cooperate. When I speak about stakeholders, your first thought is academics. You matter the last. Go to the people who are the customers. Who are the customers? The community – the third part of our session this time – we talked about community engagement. Talk to the private sector who are the business people who will create the jobs. Talk to the government who will shape the policy. We are always moaning about this policy and that policy – we have to engage. Nobody else will come from out there. Listen to industries and professional associations. Professional associations are very powerful lobbyists. The biggest union in the United States is the American Medical Association.

And you will find that these associations can do a great deal in our cause if we take an advantage of them.

Education reforms must include school education. The problem is that we are so busy looking at higher education that the upstream material that comes to us, the raw material is faulty, we do what we can. If you do business, a manufacturing plant, and you take a faulty material and reject 20-30% of the outcome. The company will be in business for three years. We keep on going. Our raw material is not adequately trained and we do not take an interest in it. We say, oh, this is the Government's business or the Education Ministry's business. No Sir. We have to engage the Education Ministry to prepare upstream materials properly.

Education reforms are most difficult. Ask the French government in 1968 and more recently. Therefore, most of all, governments must exercise a political will for reforms. If we you do not have the stomach for it, do not do it. I went through it, I know it, in a country, that was not an easy to do it. I am a citizen of Pakistan so it was a little easier for me but it was very difficult. I was the President of the Aga Khan University. The most important thing I heard is "You are from a private sector, we are a public university – you do not know anything about us". Today when I go back to these people, they are literally so excited to see me, "How can we improve?" How can reforms focus on reassessing curricula and programmes, faculty development and research? Educate stakeholders. We have to educate stakeholders, communities and private sector, forge strong linkages with industries for higher education, HR, research, and there is professional and vocational education. However, there was a tendency among Central Asian states when they talk about reforms, they talk about "Reduce the numbers of universities, get rid of those bad private universities and reduce the numbers of students so we do not have to pay much". That is a reform. So what can be done? Let me give the illustration of one initiative, which we started in 1996-1998 and it is the image of the University of Central Asia precisely to address and provide a role model. It is a role model.

It was founded by the international treaty between the governments of Kazakhstan, Kyrgyzstan and Tajikistan and His Highness Aga Khan. It is located not just in Kyrgyzstan. It is located in each of these countries in mountainous areas because the context is in difficult economic environments to address these challenging issues. There is one more point to point out. Why are we in mountainous areas? You know there is an inverse ratio between the height of the mountain and the level of quality. The higher you leave in the mountain, the poorer you are in any part of the world. Not just here. You go to Himalayas, you go to North Africa, you go to the Andes. What happens? You are poor and you do not have access to basic needs of education, healthcare, etc. and therefore you are marginalised especially in this part of the world with a large Muslim population. See what happens? You get radicalised. We had a focus. When we were starting this university, President Nazarbayev said "I am starting the Astana city, pick any land you like, you can have it". I said, "I do not want this. I want to be in the mountains of Kazakhstan." "Why in the mountains?" The same question came from Kyrgyzstan and Tajikistan. When we explained, they said, "Oh my goodness, we are with you". Building a mountain university, we signed the treaty in 2000 between the three Presidents and the Aga Khan and it focused on quality, relevance, impact and access – access for those who cannot afford it. Very important. The mission is the first internationally chartered regional university. Its campuses in three places, not just one. Offering international standards of education and research. Fostering socio-economic development of Central Asia in mountain-based societies. Civic engagement. Helping societies to preserve and draw upon their rich cultural heritage. Central Asia has a very rich cultural heritage. I could speak for an hour to two on that. The big names we hear – Ibn Sina, Nassir Khusraw, Razi, we talk about Rudaki. Some of the biggest inventors, writers, poets. They were not Arabs. Very often people think they were Arabs. They were Central Asian. They were from Ferghana, from Kyrgyzstan, they were from Tajikistan. They were from the Azerbaijani area. They were not Arabs, they had Arab names because they were Muslims. The literature in the West describes them as Arab scholars. There

are several interesting books that have been written on this theme. If you do not respect the heritage and culture of this part of the world, you are not educating people to be rooted here.

We are building three campuses – one is in Khorog in Tajikistan, the most mountainous area of Tajikistan, in Naryn which is a mountainous area in Kyrgyzstan and in Tekeli. How many Kazakhs here know where Tekeli is? How many Kazakhs here do not know where Tekeli? Tekeli is in the oblast of Taldykorgan. It is right on the eastern border of the country. All of these campuses are 150 or less kilometers from the border of China. Incidentally, I never heard the word “China” in this entire conference. We are in this part of the world where Russia and China are. They are the big neighbors. We have to talk about it and not talk only about America and Europe. I really feel that we are missing the boat because the centre of gravity has moved already and we can be with it or be left while the train is going. These campuses are across three countries and will act as a springboard for investments in the surrounding communities which will hopefully reduce marginalization.

Just to show you what we have been doing. In 2006, we started with our school of professional and continuing education. In 2006, we did not start undergraduate, we started professional and continuing education in several locations including northern Afghanistan. We now have already certified eighty thousands learners. They have already come out. We have two or three institutes. I just mentioned two mountain societies’ research institutes that engage in mountain societies, agriculture, animal husbandry, mining and engineering. The Institute of Public Policy and Administration that works in this country as well as other countries with governments on training civil servants and decision makers. In 2016, next year, our purpose is to built residential campus that will be open for our first undergraduate students. September of 2016. In 2018, we will open in Khorog – the construction is now going on. In Tekeli, InshAllah, we will open in 2020. So those who raised a hand, I am inviting you to come to Tekeli and see for yourself in 2020 or even earlier. Let us hope. We have already spent 166 million dollars building and preparing these campuses. The total investment is anticipated at 1.5 billion. Subjects in the first phase are computer sciences, communications and media, earth and environmental sciences, engineering sciences, economics, business and management. After that, this will be followed by masters and PhD degrees but step by step. (*Giving a picture of the construction in Kyrgyzstan*).

Let me conclude. The economic centre is moving to the east. The current tertiary education in Central Asia is not capable of meeting the labour market expectations. The paradoxical situation where there is a series sorts of skills for the workforce and an army of unemployable university degree holders on the other. Linkages with industries and commerce are imperative. Look at all these institutions that have done, these linkages, and moved on: MIT, Caltech, Cambridge. Civic engagement is essential. Listen to the communities and their needs. Do not tell them what you need. Listen. Linkages – we talked about. Graduates must be prepared to not only seek job but also create jobs. We heard that yesterday. Foster critical thinking and entrepreneurial skills – that is what will create jobs for others. There are no quick fixes in capacity building. This is not Aladdin’s lamp, unless you are a magician, you will not be able to make a difference. Make interventions and investments at multiple levels over a long term. We need to build and strengthen research and policy institutes, academic and vocational programmes and reform school education. Exercise a political will for reforms and engage all stakeholders in this critical effort. Ladies and gentlemen, that is my presentation. Thank you very much.

MAIN DIRECTIONS IN DEVELOPING CORPORATE PARTNERSHIPS: THE CASE OF RUDNY INDUSTRIAL INSTITUTE, KAZAKHSTAN

Abdrakhman Naizabekov

The Strategy "Kazakhstan-2050" notes the need to create a network of public-private partnership for the development of higher education system. In the State Programme of Education Development for 2011-2020 an important role is given for the interaction of universities with companies-employers. Significant efforts in this direction are being made by Rudny Industrial Institute.

Currently, the institute has gained some experience in the development of relations with big business. It's a very complex and long process, as all large company have a set of rules by which they create relationships with educational institutions.

Data Bank on work with employers includes more than 160 partner companies, including major mining companies (JSC "SSGPO", JSC "Donskoy GOK" JSC "Kostanay minerals"), construction companies (JSC "Rudnyysokolovstroy", JSC "Imstalcon"), energy companies (JSC "KEGOC") and others. Institute has concluded and implemented 94 long-term contracts with the corporate partners to carry out professional practices of students.

Undoubtedly, the biggest partner of the institute is the JSC "SSGPO", with which in 2013 Institute signed a memorandum on mutual cooperation and long-term contract for a joint practical training of students. The Ministry of Education and Science of the Republic of Kazakhstan marked positive experience of cooperation of Rudny Industrial Institute with JSC "SSGPO" at an enlarged meeting held in March, 2013.

At present, the mining company successfully employs more than 2,500 graduates of the institute. Each year, more than 30% of graduates are employed; about 150 full-time and part-time students study on grants and scholarships offered by JSC "SSGPO".

With the support of experts from mining company every year improves forms and methods of work on organization and conduct of educational process. Joint meetings are held on a regular basis; the company's specialists are involved in the preparation of educational programmes of specialties, catalogs and directories of student's competence of elective subjects, they are invited to conduct lectures and practical exercises, act as managers and reviewers of diploma and course students' works.

To improve the quality of the educational process in the academic year of 2012-2013, the Institute organized evening classes, which not only accept applicants, but also carried out the transferring of students from distance education programmes. This initiative is widely supported in the Institute by JSC "SSGPO". The educational process of students is organized according to SES, classes are held 3-4 days a week in the evening, students are able successfully combine study in Institute with their employment.

Professional practice of students from all specialties of the Institute carried out starting from the second year. For all technical specialties duration of professional practice increased to 40%. JSC "SSGPO" - is the largest and most reliable base for the students of our institute. The company management provides venue for practices, appoints supervisors, directly controls the internship of students from the institute. In addition, 70 engineering students of the Institute form 2 and 3 courses are parallel trained on courses for getting working professions during summer practice in subdivisions of "SSGPO" free of charge.

As part of the University League of Collective Security Treaty Organization (CSTO) Institute together with JSC "SSGPO" are responsible coordinators for security in the field of subsoil use.

There is a strong tendency of increasing the number of teachers of the institute, who annually are trained in the divisions of "SSGPO".

In order to improve the practical training of students and for the development of dual education there are 10 branches of Institute's departments which work in industry. Within branches of Institute's departments which work in the JSC "SSGPO" is carried out work on the formation of personnel reserve of the company through targeted training of specialists on educational programmes of a bachelor degree. In the current academic year, 45 students of the Institute defended their graduation projects in the divisions of "SSGPO".

As President Nursultan Nazarbayev states, the main task of the higher education sector in the planning period – is the active development of research activities. Currently, cooperation with the JSC "SSGPO" according to the partnership structure "education - science – innovation" has become a very specific shape.

The institute formed scientific schools, accumulated considerable experience in conducting research. The scientists of the Institute execute contractual work, fundamental and applied research in the framework of the state order of the Ministry of Education and Science of the Republic of Kazakhstan.

Institute realizes extensive work on the modernization of science and laboratory facilities. In 2009 JSC "SSGPO" was donated to the institution teaching and research equipment for 10 million KZT. In 2013 with the support of JSC "SSGPO" Institute received charitable aid from the Corporate Fund "ERG Komek" for 20 million KZT. At present, a letter to the Corporate Fund "ERG Komek" was sent to obtain charity / sponsorship for the acquisition of teaching and laboratory equipment worth a total of about 15 million KZT.

Working with corporate partners Institute focuses on the employment of graduates. In the Alumni Career Day of RII – 2015 took part representatives from more than 30 enterprises and organizations of the Republic of Kazakhstan and Russian Federation, 8 companies presented their vacancies.

Pursuant to the official letter issued by the Ministry of Education and Science's Department of Higher and Postgraduate Education and International Cooperation as of the 1st of August, 2015, data on employment of graduates in 2014 was sent for verification to the State Centre for Pension Payments. At the end of 2014, the following information was received: 90% of graduates are employed, the employment of graduates of the Institute was 94%.

Considering a new course of our long-term strategic policy "Kazakhstan-2050", there are certain opportunities for the Institute and we are working on the development of modern technical specialties. Along with JSC "SSGPO" we have developed a project on creating Expert Council for Accreditation of Practical Skills of Students. Today's reality shows that partnership and collaboration is virtually the only opportunity for good quality changes. Isolated systems have no future – the key to success in the modern world are communication and partnership..

UNIVERSITY/INDUSTRY PARTNERSHIPS: PROMISING PRACTICES FROM THE FIELD

Matthew Hartley

Over the several years I have led a research team from the University of Pennsylvania and Nazarbayev University along with my co-principal investigator from Nazarbayev University Graduate School of Education, Dr. Aida Sagintayeva. Together our team has visited 25 universities in seven cities in Kazakhstan learning more about how these institutions and their leaders are responding to higher education reforms. I'd like to offer some reflections on partnerships on the basis of what we've seen.

In 2007 the OECD – World Bank report on Kazakhstan said the following:

There is limited ... interaction between most Kazakhstan universities and employers, compared to the world's more competitive countries. There seems to be no regular or formal involvement of employers in defining the knowledge, skills, and competitiveness on graduation." (OECD – World Bank, 2007).

Some important things have changed since that report was issued. Job preparation is a key theme in *State Programme for Educational Development 2011-2020*. And many of the universities we've visited are in the process of developing partnerships with local industry.

One example is Kostanay State University. The University has developed the concept of "Faculty Boards of Trustees." These groups are not really trustees in the traditional sense. They have no oversight role for the whole university. They actually function in ways very similar to boards of overseers that some universities in the U.S. have. (Harvard and the University of Pennsylvania are two examples.) Overseers work closely with one academic area—usually a school. The Faculty Board of Trustees at Kostanay State University work closely with academic departments. They meet regularly with them. They conduct reviews of the curriculum and offer advice about what changes might be made to ensure it is up to date and that students are getting the kind of knowledge they need to be successful in the workforce. They jointly develop internships that serve the needs of both partners. The employers benefit from these partnerships because they are able to influence the training of their future employees, which is one of their highest priorities. The university benefits by having the expertise of people in industry help shape the curriculum to make it relevant and the partnership enables them to provide students with internships that give them real-world experience.

A lot of research has been done on partnerships in the corporate sector. This literature shows that partnerships are beneficial because:

- They allow organizations to take on activities that they could not do on their own;
- Partnerships bring together people with different perspectives and that can lead to the development of new ideas and new programmes and services;
- Third, working together, partners are better able to monitor the changing environment and to identify new opportunities and potential risks (Eckel & Hartley, 2008).

We see these same benefits in university/industry partnerships as well. There is a broader trend that is happening today at universities in many parts of the world today. It is a movement away from the idea that the university is the place where the experts are and where knowledge is created and then distributed to the rest of the world to the idea that knowledge needs to be co-created. This shift is very well described in a quote from the Association of Commonwealth Universities (Bjarnason and Coldstream, 2003):

"Increasingly, academics in many disciplines are realizing that their own intellectual territory overlaps with that of other knowledge professionals working outside the university sector. [...] Knowledge is being keenly pursued in the context of its application and in a dialogue of

practice with theory through a network of policy-advisors, companies, consultants, think-tanks, and knowledge brokers as well as academics” (p. 323).

People are realizing that knowledge is best produced when expertise from all areas—the university and industry and government and others—come together to tackle difficult problems. The work universities here in Kazakhstan are taking on with local partners don't just produce opportunities like internships, there are involving employers in discussions about the curriculum: That's really quite remarkable. It shows the commitment not just to creating opportunities that lead to jobs or better training for students. It's a commitment to rethinking how the university does its work.

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TECHNICAL SKILLS: THROUGH LEARNING AND PRACTICE?

Sabyrzhan Madeyev

Implementation of the State Programme of Industrial and Innovative Development of the Republic of Kazakhstan is impossible without a developed system of professional education, which targets to train specialists in order to meet the real needs of the labor market. Accordingly, the employment of graduates of colleges and universities (and, first and foremost, in the area of their specialty), the level of their wages and their subsequent career are the most important effectiveness indicators of a system of technical and vocational, and higher education.

For many jobs in today's labor market, technical and vocational education is more appropriate and rational than higher education. At the same time, many jobs are becoming technically more complicated, information-rich and require applicants to have effective combination of practical skills and theoretical knowledge. Accordingly, in terms of developing students' competences and skills, we observe the increase of the convergence of systems of technical and vocational education and training (TVET) and higher education.

What the colleges and universities can learn from each other in the process of collaboration and partnership?

Interaction of universities and colleges should help to ensure the continuity of the levels of education by synchronizing the contents of the relevant curriculum (university credits and college modules). In terms of the future employment, this factor of continuity has two functions: it reduces the training time for college graduates, who directly enter the second or third year of a university in related specialties; and it improves the quality of university graduates, as they are more motivated and focused on training for this specialty, which they have studied during the college.

In addition, the interaction of universities and colleges can encourage the development of additional professional competencies within a particular specialty. When a student of a college or a university gets a certain specialty, he or she can complement their skills with working professions, which will increase their employment opportunities.

In the frame of training a particular specialty to a student (for example, a cook), some colleges teach their students the skills of several related occupations (confectioner, bartender, waiter) with the issuance of the relevant certificate, thereby increasing the likelihood of their future employment. Universities can also enhance the competitiveness of their graduates by training them additional skills (job qualifications).

It is known that training at the university is more theorized compared to training at colleges, so the universities' adoption of college experience, the practical component of which reaches 60-70%, will benefit students of higher educational institutions. Moreover, since universities save credits by including college content in the modules of the university curriculum, they may use such credits to upgrade and improve their academic programmes by increasing the number of practical training hours.

Colleges, in their turn, can solve the problem of the early entrance of qualified junior engineering staff to the labor market necessary for industrial and innovative development of our country by implementing a programme of post-secondary education (applied baccalaureate).

Considering various options for collaboration and co-operation of vocational schools in Kazakhstan, it should be noted that recently there was a discussion about the possibility of opening colleges in the universities. Thus, private universities currently have a competitive advantage over state institutions, since the law does not prohibit them to create structural units following the model of colleges. People who oppose against creation of colleges at state universities, have

justified their view by the fact that the universities almost never engaged in strengthening college facilities, they never paid enough attention to improvement of qualification of engineering and teaching staff, and virtually transformed colleges into their university foundation courses.

On the other hand, the experience of many countries and of some private universities of Kazakhstan shows that with proper management that includes not only a uniformed curriculum and a common ideology, but regular investments in facilities and staff development can turn the “college-university” partnership into an effective educational institution for training highly qualified specialists.

As skills requirements change, how do vocational schools partner with employers and society?

Today, social partnership between educational institutions and employers is becoming a necessary part of the training process. Companies are encouraged to participate in all stages of training, from career guidance and specialists order, to independent certification and employment. Representatives of companies are members of the Board of Trustees and can influence the organization and content of the curriculum and teaching-and-learning process, such as development and harmonization of curricula and academic programmes, organization of professional practices, mentoring and staff internships. As part of such councils (trustees, supervisory, advisory and regional boards), a direct dialogue evolves with the focus on the needs of the economy, the situation and developments in the labor market, and the requirements for professional competence. This dialogue contributes to the timely changes in the training of specialists.

Companies and educational institutions in Kazakhstan, according to the economic situation, regional peculiarities and local capacity, use different forms of cooperation, such as public-private partnerships, dual training, patronage, concession, trust management, privatization, multilateral memoranda and contracts, sponsorship and so on. The most effective form of partnership of colleges and employers is a dual form of education, which provides mutual responsibility in the training of qualified specialists. Currently, 280 colleges of Kazakhstan (with the participation of 3,322 enterprises covering more than 21 thousand students) in varying degrees, introduce components of dual training. However, full promotion of this form of training is hampered by the absence of provisions in the law “On Education”, which allow legalizing all procedures of mutual relations of the institution and enterprise. In the nearest future, it is expected to adopt amendments to the text of the law, including amendments about the concept of “dual training” and regarding a minimum amount of hours of practical training. The next step should be the adoption of the “Rules of the Organization of Dual Training” that will regulate matters of mutual responsibility and will guarantee the rights and obligations of the parties, which participate in the dual form of education.

Besides, the Ministry of Education and Science of Kazakhstan has developed the Terms of Placement of State Order for Specialists Training in the TVET system, where one of the main criteria for the placement of state orders in the college is employment and employment of graduates (not less than 78%). It encourages educational students to have a closer contact with companies and employers.

Career guidance is a good basis for cooperation with employers, educational institutions and society. It usually focuses not only on the early detection of the students abilities in a particular professional field, but also on the students’ understanding of the characteristics of different occupations, possible prospects, and career development, as well as on the formation of a stable interest in vocational and technical education.

An important way to make employers and society influence the educational process in colleges and universities is to provide them with professional standards through industry associations and through the National Chamber of Entrepreneurs. Professional standards developed by industry

associations contain requirements for employees within the industry regarding their competence and qualification levels.

Currently in Kazakhstan, the work on formation of professional standards is actively conducted with the joint efforts of the Ministry of Health and Social Development (formerly, the Ministry of Labour and Social Security), Ministry of Education and Science, National Chamber of Entrepreneurs, and industry associations.

How curricula and extra-curricular activities in TVET are developed in order to enhance the competitiveness of graduates and their subsequent employment?

For colleges, professional standards will be a guideline for the preparation of competitive specialists, and on the base of these standards, the educational standards, relevant curricula, and modules will be formed. The functional card of standards (labor function, competence) will be used in the development of curriculum. Accordingly, employers will track changes in the workplace and in the industry to make timely amendments to the professional standards. Altogether, this will ensure effective cooperation of employer and educational institution: a unified learning plan and specialist's education within the framework of professional practice and in-service training; modernization of learning plans and curriculum; in-service professional development of engineering and teaching staff offered by employer; development of facilities at the expense of the enterprise; participation of the industrial experts in the educational process of colleges.

Thus, in the frame of the Project "Modernization of Vocational and Technical Education" funded by the World Bank and administered by the Ministry of Education and Science, a model of professional standards has been introduced. Based on that model, 147 professional standards were developed for eleven sectors of the economy. They formed the basis for industry associations for the formation of their own professional standards, and the basis for educational institutions for the establishment of practice-oriented educational programs and training modules that meet the needs of employers.

In addition, the qualification requirements incorporated in the professional standards will be the basis for an independent assessment of college graduates by respective certification authorities. Thus, it will ensure the independence of the teaching and assessment process, competitive environment assessment, objective assessment of learning outcomes, and that assessment criteria match the requirements of employers.

How technical skills acquired in vocational schools contribute to the development of a student's career development?

College graduates have the opportunity to develop their career by "working and studying" or by "studying and working". If they choose to "work and study", the college graduates are employed in companies, so they plan their studies at the university taking into account the enterprise's needs in specialists. Already at the first stage of the student's practical training the company selects more capable and talented students according to the fields of operations, and then monitors their further growth.

In the frame of "study and work" programme, a student is accepted to a shortened training program in the universities of Kazakhstan and Russia according to his or her specialty. Those students note that studying at university is easier for them compared to the experiences of high school graduates because the former are more prepared in their specialty and they have skills acquired during the practical training in enterprises.

Practice-based learning aims to teach technical skills to students, which are necessary for entering a labor market. Thus, the modernization of the TVET system aims to introduce new technologies designed for reproduction and implementation of acquired knowledge in practice.

Besides, since 2012, the TVET system has the Joint-Stock Company “Holding Kasipkor” functioning which aims to create the network of innovative colleges of new type taking into account the experience of the best overseas colleges, and to provide their students an opportunity to go through practical training at the best local enterprises in Kazakhstan. Graduates of these colleges will be demanded by the labour market, as the skills acquired by them in practice, will meet the highest requirements of employers.

An important moment in career development of college graduates of Kazakhstan is the fact that in 2014, Kazakhstan became a member of the international organization ‘World Skills International’, which every two years holds the world championship on working specialties. This kind of Olympic Games in TVET preceded by National Championship and regional competitions, which are also held according to international standards and meet the requirements of the world’s leading employers in a particular professional field. Accordingly, the content of educational programmes and the organization of practical trainings by colleges of college students will change for the better, which will undoubtedly affect both the future careers of graduates of the TVET system and the image of the entire system of technical and vocational education as a whole.

TVET AND CAREER DEVELOPMENT

Geoff Hayward

I want to start with an anecdote. A few years ago we advertised for a secretary in the Faculty of Education where I then worked. Twenty years ago that job would have been taken by a school leaver with a Vocational qualification that certified proficiency in typing, basic IT skills, organising abilities and so on. The job has not really changed and we advertised for a person with those skills and qualifications.

We had just over 90 applicants for an entry-level administrative job. Of those 90 80%+ of the applicants had degrees, Masters degrees and/or PhDs. This is the bumping down that Professor Lauder described. What these highly qualified young people lack is work experience and vocational know how: they hope that by taking these entry level jobs they will gain the experience they need to access higher level administrative jobs within the University. We employed someone without a degree but with relevant experience, a school leaver with VET qualifications.

The point of the anecdote is that the labour market in the UK is not providing enough highly skilled jobs for graduates and this is a worldwide phenomenon. A challenge for TVET graduates as they seek to develop their careers is how they compete with graduates for entry-level jobs. UK graduates now retrain as plumbers, as electricians and as carpenters. My tiler has a degree in engineering but is a very good tiler – just come and look at my bathroom.

Some German students leave school with the Abitur, the academic school leaving qualification, undertake an apprenticeship, and then go to University. Transitions to the labour market are becoming more complex, non-linear and ambiguous. Navigating such changes is a major challenge for the design and reform of TVET systems designed for a more linear age across the world.

There is now general agreement that high quality primary education is a key component of economic success in a globalizing knowledge economy. High quality general secondary education also seems essential for economic growth in the modern world. Developing young people's abilities to play with ideas and information seems to be crucial to technological innovation and imitation of technological innovation.

However, the evidence about the role of TVET and HE in relation to economic development is, as Philippe Aghion and his colleagues (2009) suggest, more fragile. In relation to HE, Aghion's research suggests positive returns to HE if a country is using its graduates on the technological frontier and producing jobs that require graduate skills – this implies not just an education policy but an industrial policy too that supports innovation, for example through tax breaks for R&D work a strategy pursued successfully by Singapore.

The evidence about TVET systems is even more ambiguous. In the earliest stages of industrial development skills needed to do the job were learnt on the job, largely through apprenticeship style systems in the case of skilled craftsmen (and they were all men) or by sitting next to a more experienced worker at say a factory loom or a spinning machine. In this sense TVET is the oldest form of education: the skills and knowledge needed to undertake work were learnt within the family and the community: blacksmiths begat blacksmiths; young women learnt domestic skills from their mothers.

The earliest schools we know about are in ancient Sumeria, about 3000 km to the south west of Astana. This classroom (Figure 1) dates from about 5000 years ago. It looks remarkably like a modern classroom.

Figure 1 - Sumerian Classroom ca 2000 BCE



Here the children would have sat on these benches and the teacher would have occupied this large space at the front. The only strange objects are the bowl-like structures; these are related to the vocational purpose of the school: learning to write. This is a school for scribes and they are learning a newly invented technology: writing. They cannot learn to write at home because their parents and others in the community are illiterate; they have to come to a special place a vocational school.

The bowls contain clay – learning is by rote exercise forming cuneiform characters with a wooden stylus on a clay tablet. Once the exercise is complete the students put clay from the bowls over their tablets and start again. How like the modern computer screen running behaviourist-learning programmes based upon drill and test.

Why do I see this as a vocational school – well they are learning a vocation, building the basis for a career. As the American philosopher John Dewey (1915, p. 307) pointed out over a hundred years ago in his great book *Democracy and Education*:

‘A vocation means nothing but such a direction of life activities as renders them perceptibly significant to a person, because of the consequences they accomplish, and also useful to his associates. The opposite of a career is nether leisure nor culture, but aimlessness, capriciousness, the absence of cumulative achievement in experience on the personal side, and idle display, a parasitic dependence upon the others, on the social side.’

One might think then that all we need to do to design a successful TVET system is to decide what skills, aptitudes, and competencies we want to develop in young people in order for them to pursue a career, how to certify them and how to decide what the best places are to learn these things – the general education system, vocational tracks within the general education system, the workplace itself or a combination of workplace and schooling as in the famous German dual system?

But the philosophical and practical problems we always have in deciding the nature of the curriculum and how to teach it is amplified in the case of TVET. For example should we teach general capabilities such as writing or should we concentrate on highly specific, even job specific skills?

Policymakers have been emphasizing the need to invest in education and skills formation but if human capital is such a desirable good why is it so hard to create? The development of knowledge, skills and aptitudes, competencies if you must though I think capability is a better descriptor, is not simply a matter of rational choice with young people and their families, on the one hand, and employers, on the other hand, deciding to choose to invest in vocational training to improve the productivity of their companies and individual wages.

TVET systems exist and function more or less efficiently and effectively within a network of other social institutions and process for example, the labour market, firm’s product and competitive

strategies, families and their expectations for their children, and general and higher education. As Busemeyer and Trampusch (2012, p.3) suggest:

‘... the development and availability of skills is not a matter of unconstrained rational choices but is strongly conditioned by and reflected in the institutional context of political economies, both historically and in the contemporary period ... hence the domain of skill formation must not be regarded in isolation from other domains of the political economy.’

Let me exemplify by considering the German dual system of TVET. This is based upon a tripartite set of agreements between the state, employers and trade unions that are grounded in a long history, arguably going back to the medieval guild system. Thelen and Busemeyer (2012, p. 69) argue that:

‘In its heyday, Germany’s highly successful model of diversified quality production rested on a set of institutionally anchored incentives and constraints that, in Wolfgang Streeck’s memorable phrase, both “forced and facilitated” German firms’ pursuit of high-quality, high-wage, high-value added production. The training system [the dual system] was a central part of the model, as it required firms to train their workers according to occupational profiles whose content and quality were subject to nationally standardized and rigorously enforced curricula.’

This quote suggests that what the German system ideally achieves is to force firms to over train their apprentices: the dual system provides young workers with access to a broad range of skills which go beyond the immediate needs of any firm. This is achieved through a mixture of high quality on the job training, rigorously enforced by the local chambers of commerce and strong employer organisations, combined with general education delivered by vocational schools.

The skilled workers produced by the system, with the ability to operate in a range of tasks using a range of skills, are a key source of competitive advantage for the German economy.

No one can force German firms to train – so why do German firms, or at least those in the traditional manufacturing and craft sectors, acquiesce to this corporatist, collectivist training system; seemingly the very antithesis of neoliberal capitalist modes of production? Other wider institutional factors are needed to explain this, notably centralised collective wage bargaining with trade unions which leads to wage compression: skilled workers get paid less than you might expect and less-skilled workers more, so wages become compressed. Holding down the wages of skilled workers increases the returns to the firm of training; paying lower skilled workers more provides incentives to raise productivity. Furthermore, centralised collective bargaining and strong employer associations reduces the attraction of poaching workers and makes moving jobs less attractive for skilled workers (they are not going to get paid a lot if anymore by moving to another factory).

The German TVET system works effectively and efficiently because of a wider set of institutional factors that provide strong incentives for firms to offer apprenticeship places and train, and strong constraints that ensure the content and quality of the training is of high quality. It follows that without this network of factors being in place, and the sets of incentives and constraints have developed over a long time, simply transplanting wholesale the German dual system will not necessarily produce effective and efficient outcomes. Developing a well functioning TVET system requires consideration of a much wider set of social processes than simply that of the training system itself.

TVET and progression to Higher Education

The central concern of Dewey with career can be seen as the challenge of progression. What opportunities does participation in TVET open up for young people, and what opportunities does it block off? When is the best age to decide whether to take up TVET? Does offering more TVET make societies more inclusive? Answering such questions, massive cross-national comparisons undertaken in 1980s and the 1990s could find little if any evidence that expanding TVET provision

led to greater social equality. Accessing Higher Education remains crucial for making progress to higher paid jobs.

Recent research, including our own in the UK, has shown that an increasing number of young people with VET qualifications have successfully gained access to Higher Education. A clear national qualifications framework, and other tools, such as the UCAS Tariff, which show the equivalence of academic and vocational qualifications, and the utility of some vocational qualifications for supporting progression to Higher Education in the UK, have been key mechanisms underpinning the increased transition from VET to HE.

Qualification frameworks signal, at least to some extent, to higher education gatekeepers and employers, the relative value of different qualifications and that can open doorways. The drop out rate from HE for students with vocational qualifications is, however, significantly higher than for those coming with academic qualifications. This is highly inefficient. The reasons for such drop out are complex but a major determinant seems to be the mismatch in the knowledge base developed during VET and the type of knowledge being taught in Higher Education, and the pedagogy being employed – from work sites to lecture theatres is not an easy transition.

Two approaches seem to help young people overcome the transitional frictions that they experience as they move from VET to Higher Education. First a clear mapping of the VET and HE curriculum as occurs in the linkage between ISCED Level 3 VET provision in Danish vocational schools and the Danish Technical University in Copenhagen. Second, support to master academic content. This may take the form of an access year to help VET students make the transition to HE, quite common in Britain.

You also need good support systems in Higher Education that responds to the individual needs of students. However, this costs both in terms of time, for students, and money for universities, which is an active disincentive for some Universities to take VET students. Nonetheless, to enable progression to make sure TVET contributes to making a career through enabling participation in Higher Education such investment seems essential.

Conclusion

Being prepared through education whether general or VET to become an independent, economically self sufficient adult is of course a necessary condition for judging whether an education system is using resources effectively and efficiently. But it is, I would argue, not a sufficient criterion. Education, whether general or vocational, is about more than making a successful transition to the Labour Market and earning lots of money.

Education plays a key role in developing active citizens: education should build inclusive societies and that is better for all of us. Thus the citizenship developing capacity of TVET must not be overlooked and it seems fair, since we all benefit from living in more inclusive societies, that we should all pay for it even if we do not have children.

I would like to end by reiterating a point that I feel is too often forgotten nowadays in discussions about the purpose of education and which has been rarely mentioned at this conference. We live in an instrumental age and of course students want an education that will lead to a bright economic future for them and their families.

But the engineers who built the gas chambers at Auschwitz had a training that enabled them to follow a lucrative career that resulted in the murder of 4 million people; the investment bankers were well trained in the use of derivatives and bizarre financial instruments that only they understood in the pursuit of profit but their actions bankrupted the world economy in 2007/08 and caused huge pain largely to poorer people. Neither of these so called educated groups understood how to act morally. Ultimately I would argue that the role of education is to help us become moral agents: the real purpose of education is to help us to become more human.

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SKILLS, EMPLOYABILITY AND UNIVERSITY GRADUATES?

Rainer Goertz

Introduction

Let me start with a brief story: "In the early morning a school inspector drives his car to a village in order to visit a village school. Half the way and amid open fields the motor of his car fails. For having no technical skills the school inspector looks for help. After some while a ten year old boy comes along the road from the direction the inspector has to go. After the boy knows about the problem of the car he opens the bonnet and works a little bit at the carburetor. Minutes later the motor starts again and runs smoothly. The school inspector admires the performance of the young boy but asked him: "Why are you talented boy not at school?" The boy answers: "You must know: Today our school inspector will come to our school. Therefore my teacher has sent all less good students home in order to make a good impression!" (Free Translation; Theodor Wilhelm, Georg Kerschensteiner (1854-1932), in: *Klassiker der Pädagogik II*, München 1991, 103-126, 103.)

The story may give one already an answer to the topic of the Panel: What is and can be the role of technical and vocational education! But the story point out another issue: Up till now our education system is a 2-class-system where intelligent students choose the "king way" via universities direct into leading positions of the public and the private sector while less intelligent students has to go a vocational and technical education to find their jobs as workers. This tradition has justified a 2-class-society of "academics" and "workers" which was well fitting to an employment system of the period of industrialization. The approach of the universities based mainly on the education concept of Humboldt while the skill related on the Vocational Training Concept of Georg Kerschensteiner emphasizing solid social values.

Based on Georg Kerschensteiner's concept a "VET-system" the first "Worker School" and some years later the well known "Dual VET" system in Germany was established not more than 10 years before the 2. World War began. Beginning 1980 an increasing technological development demanded higher skills and in particular a more technical experienced workforce. The new challenge came along with the computer era and had a deep impact for the service and production sector. For the business sector was not well prepared for new computer technology "Technical and Vocational Education" got a high priority to master the new technology challenges: Existing VET training programmes had to be updated to Technical and Vocational Education Training programmes (TVET) at short notice. Even new professions like "programmer" had to be developed and implemented. Till 1980 it was still believed in Germany that technology jumps will happen all 20 years, after 1980 it was supposed all 10 years and up till now it is almost clear that the speed of technology jumps will increase all 5 years or rather less.

Intensified by a globalization of the world, by global challenges like environmental, technological, social and scientific issues, even economic and financial unbalances struck the public and private sector and demand an increasing range of knowledge, skills, experiences and social values of the workforce in order to master them. Since that time the role of the TVET-system in Germany changed from a "supplier" to a "developer" agent for qualifications and key competences for the future! The demand of the employment sector for increasing qualifications, skills and competences blasted away the traditional borders of TVET! To react on professional competences TVET training programmes have got already more and more ambitious. It was no longer a vocational training for workers but a technical Training for professional experts which requires highly qualified appliers. Vice versa universities in particular engineer's, natural and social sciences felt the pressure to include global topics and to provide more practical experiences and technology skills. The distinction between Higher Education and higher TVET seems partly to blurs.

All that has consequences for the traditional 2 education system! Humboldt's education concept and Georg Kerschensteiner's "worker school" seem to fail to respond adequately to the new challenges!

Thesis

1. Employability of school leavers and graduates shall be a key objective of each education institution.
2. It is interesting: A survey in Germany came to the result that for employers the most important key competences are social values.
3. The education system as a whole shall lay down a basis for lifelong learning.
4. TVET shall be understood as an important interface between the education and employment sector to guarantee the employability of the students no matter from university, college or general education schools.
5. Therefore: Education institution and potential employers shall recognize their common responsibility for the development of efficient teaching programmes and practical instructions.
6. Key competences and practical experiences are backbone and key success factors for employability.
7. The education system as a whole shall be as flexible as possible and as diversified as necessary. Supplemental to classic universities proven concepts of other countries can be adapted. For example
 - A dual TVET system like it is being introduced in Kazakhstan.
 - Merging of Higher Technical Education programmes and Higher TVET like "Dual Study Courses" which lead to TVET profession and a Master's degree.
 - Technical universities with applied research institutions which support innovations, technology development and even Start Ups.

Back to the question of the Panel: What is the role of TVET? As the interface of the education and employment sector TVET shall contribute knowledge, skills and social values efficiently supporting ecological, economical and social development of the future!

**TRANSITION FROM SCHOOL TO UNIVERSITY:
SOME ISSUES FOR KAZAKHSTAN AND THE WIDER REGION**

David Bridges

This short presentation commented on three issues relating to students' transition from school to higher education: selection; curriculum and teacher training. In all cases the observations point towards the crucial importance of schools and universities working in a close partnership based on mutual respect. The comments were derived primarily from experience and research in Kazakhstan conducted with colleagues from Nazarbayev University Graduate School of Education:

Selection

Our work on this is still in progress, but all the evidence so far indicates that UNT scores are not good predictors of subsequent success in higher education or at least few people in higher education seem to believe that they are, though the whole system relies heavily upon them. One of the difficulties about answering the question is that records which might allow one to make proper comparisons between UNT scores, completion rates and final degree standards are just not available.

An important qualification to this point is that among the things that success in the UNT does assess are, in all probability, strong motivation to succeed, a willingness to work really hard at something and good powers of retention. For some this is one of the main benefits of the UNT:

“What is the best way to bring someone up? The answer is – hard work. We keep telling them that they work hard when they study 17 subjects. They should not get tired from it. If you go to take the UNT...; there are 35 thousand questions in 5 subjects and 7 thousand questions in one subject.... They should not see it as a problem. Because the less we work, the more we get lazy.’ (ii-S-E-2-Deputy_Director)

However, when one considers what are the intellectual qualities that higher education expects in its students and compares these with what the UNT tests, it would be a remarkable coincidence if the latter was to prove a predictor of the former.

I may be wrong, but I suppose that HE might require students, for example:

To make comparisons (eg between two poems or plays, between photos of a healthy and unhealthy pair of lungs, between photos of two landscapes)

To evaluate evidence (eg alternative accounts of historical events,

To explain how or why something is as it is (eg why a particular combination of chemicals produces a particular effect; how some plants survive without soil; how Kazakhstan came to have the mixed population that it has today)

To develop an argument (eg a proof in mathematics; to write an essay in history a question such as ‘Why did the Revolution of 1917 succeed where the revolution of 1905 had failed?’)

To conduct a small scale inquiry or experiment

To evaluate and critique an on-line resource or a piece of writing

Are not these the sort of competencies that we seek to develop in universities?

But by contrast the UNT tests almost exclusively memorisation and recall – “*Only information..*” (iv-S-A-2-Mathematics_teacher). Both of these are, no doubt, helpful in higher education, but hardly a sufficient sample of the sorts of things that a university is or should be interested in.

One ex-school principal again describes his view that students' focus at the end of school is simply to pass the UNT but this time it is to the neglect of the rest of the curriculum:

“When a pupil gets to the 10 – 11 grade, he or she won’t pay attention to other subjects. It seems children think that test subjects are more important than others.” (ii-LG-A-1-Vice-Director)

This leads to individuals appearing to feel less well-educated than previous generations. In other words, the narrow scope of the testing in the current UNT means that it fails to function as a predictor of performance in higher education while at the same time leading to a narrowing of what is actually taught in schools – which brings us to curriculum.

Curriculum

Good curriculum planning – for universities as much as for schools - requires attention to (at least) four key principles of curriculum design: continuity, progression, differentiation and coherence. These apply to universities as much as to schools. And they apply to the transition in learning as students move from one to another. Let me note these and then comment on some of the implications for HE.

Continuity and progression: Of course, for many students, moving from school to university will mean a movement into a new subject area, such as law, business management or architecture, which have not been studied in school as such. Nevertheless the principles still apply. One would hope that the mathematics studied at school provided a relevant platform for the demands of engineering and for social science and that the university could build upon the knowledge and understanding acquired in school (continuity) at the same time as extending this (progression). Equally the language skills acquired in school should provide a solid foundation on which HE can build. If this is not the case, then it seems to me that those responsible for schools and for universities need urgently to get together to decide how this continuity and progression can be achieved.

This issue assumes new significance as the school curriculum itself goes through changes: a new focus on all four language skills; the introduction of project work in science; in some schools the introduction of the use of English as a medium of instruction for science; group work; more emphasis on the sort of intellectual skills outlined above. The generations of students that are going to enter higher education over the next decade will be bringing new knowledge, skills and understanding. Universities need to understand this and to revise their teaching to reflect what will hopefully be more advanced levels of achievement.

Differentiation: This is a well accepted principle in higher education in so far as universities allow and require specialisations in line with students’ interests, career ambitions and capacities. One size does not fit all in higher education. But there are some rather particular issues that need to be addressed in the current context if what is taught in higher education is going to reflect significant differences in students’ achievements. For example, some students – but of course not all -- are already arriving in universities after completing 12 rather than 11 years of schooling. Are universities responding adequately to their new levels of achievement?

School university partnerships in curriculum planning, assessment and in teacher education:

Everything I have said so far points to the importance of close collaboration between schools and universities in the interests of the best possible education for the students in whose careers and career development they share. The design of the school curriculum should be something in which schools and universities (and employer organisations and parent groups) can all play a full part. The same applies to assessment: any system of end of school assessment has to fulfil some different functions – reporting on achievement at the end of schooling, assessing suitability for entry to higher education and providing guidance on the suitability of the student for different career options. The interests of the student require high quality and on-going collaboration between these interested parties.

The requirement for university school collaboration applies in a different way when it comes to teacher education. These students are, like any others, students of the university studying for a degree. But they are also seeking to develop professional skills and understanding that will equip them to teach. Schools have at least two kinds of interest in these students and the higher education provision that is made for them: first they have an interest as future employers in ensuring that these future teachers are actually equipped to succeed as teachers; but, secondly, *school* teachers also have much of the professional understanding and skills that students need to acquire. By contrast, few staff in the universities and Pedagogic Institutes have the basis of *recent and relevant* experience of teaching in schools from which to contribute to their students' development of these skills and understanding.

If this analysis is correct, then the argument for a strong partnership between schools and universities in the education of teachers is, I believe, an overwhelming one, and this extends both to the joined deliver of training in universities and the co-supervision and assessment of students on an extended period of teaching practice.

In short, I have argued throughout this presentation that, in the interests of the students in whose education they share, and in particular in the interests of a successful transition between school and university and (for teachers) university and school, schools and universities need to talk to each other – about curriculum, about assessment, about teacher training -- and to work together, respecting the different contributions that both can make to the continuing development of education in Kazakhstan.

SOVIET LEGACY IN HIGHER EDUCATION: SOME OBSERVATIONS FROM RUSSIA

Isak Froumin

Introduction

Hardly more than five years ago there was no Nazarbayev University in Astana, but now Eurasian Higher Education Leaders' Forum is being held there. That shows that some magnitude has changed recently. At the same time I am taking away two things today. One of them is the strange phenomenon of nostalgia and a questioning about the essence of the Soviet legacy in higher education. I have to admit that during the last two years our group in Moscow really tried to understand what this legacy is about. When it is said that the Soviet Union had a great education system, what is meant by that precisely? I think that I am not going to give all answers but for sure I can present a few observations.

Key features of the higher education system in the USSR

I have to remind you that the Soviet higher education system was the result of a very deliberate project. The founder of the Soviet state Vladimir Lenin said once that the USSR should work as one single unified factory. Higher education system was the part of the "state factory" or the "economic machinery". In other words the whole higher education system in the USSR was one big corporate university for a corporation that was called the "Soviet economy". Bolsheviks experimented and tried to develop a perfect machine to serve this purpose. We did some analysis of the types of the institutions that Bolsheviks and Soviet planners developed. It was found that the idea of specialization was really the most important when the Soviet higher education system worked as a man-power production machine.

In 1930 there were 152 universities located at the current Russian Federation's territory which is not the whole Soviet Union obviously. Only a year later big experiment on the establishment of more specialized university system had been implemented after which almost 600 universities were created. There was a great example of Moscow animal technician institute that was divided into three different specialized higher education institutions: of horse-breeding, of sheep-breeding and veterinary university. These separate and highly specialized institutions worked perfectly with employers because there was a state system of planning. The plan was not just about how many sheep to breed but how many sheep-keepers or engineers in this field particular university should train.

The most important basis of this system was mandatory job placement of university graduates. Even if we have nostalgia about this system which to some extent has worked not perfectly but OK, it should be understood that it could work only according to the assumption that a university graduate could be placed at a particular job place without any questions. When we have these nostalgic modes about better linkages between employers and universities, we have to think about the abovementioned extremes.

Another interesting observation is that Soviet authorities invented corporate universities because there were a number of universities that were connected not to particular industries but to particular enterprises. That is why students have had very meaningful training programmes starting from manual workers, then middle-level technicians and then engineers. When we talk about linkages and when I first noticed this increasingly growing discourse of employability in Europe I said to myself: "Well, now the discussions about the comeback to these models of mandatory job placement will get on the top of higher education policy agenda".

What is very important when we talk about the structure of Russia or Kazakhstan higher education systems is that the number of universities did not really grow between the end of 30s and early 90s in the former Soviet states. In early 90s universities “mushroomed” and higher education landscapes had been changed significantly. Essentially the structure of the higher education system that we inherited is very much like an industrial or corporate system. In this case we cannot be absolutely sure that it would work perfectly with the changing economic environment.

Another important feature of the Soviet higher education system is that it was very restrictive in terms of the number of students applying for a university degree. Today about 80% of the cohort of the secondary school graduates go to universities. On the other side, there were only 22 percent of school graduates who entered universities in the late Soviet time. Consequently, when such a huge increase in the number of students is taking place labor market and HE relationships transform dramatically. In the sentiments about regulated linkages between employers and higher education, it should not be forgotten that Russia in the same manner as Kazakhstan is dealing with a different market economy without a mandatory job placement. We are dealing with completely different scales of university graduates which are very difficult or even impossible to be managed directly.

The last observation to be mentioned is related to the discussion about a number of economists and lawyers. Justifiably this could be interpreted as a considerable mismatch between what the labor market needs and what universities produce. But it could also be interpreted as a bad response of the higher education system to the real needs of the labor market. Nevertheless it should be said that such structure of the higher education system was established naturally as a response to changing demands of the households for general skills to manage information, provide services, etc. Unfortunately, in many post-Soviet countries, we are constrained by the former Soviet specialization type of higher education. That is probably the most important reason why liberal arts education did not gain wide distribution in Russia for example.

As a conclusion it should be stressed that we should not jump to conclusions about the mismatch between supply and demand in post-Soviet higher education systems. We need to think about the most appropriate and effective ways to establish better linkages between the universities and the employers. Higher education could be the starting point in this process taking a good look at the current structure of the labor market, comparing it with the set of specializations, or training programmes conducted. Higher education institutions should not try to produce planned numbers of engineers and others until they understand exactly what the labor market needs in terms of qualifications and competences. At the same time the representatives of the labor market should be more active and more enthusiastic about the discussions with the universities on their future employers training

PRINCIPAL LEARNING POINTS

Sue Bennett

During the Forum, we heard from many practitioners and experts from government, employers and universities across the world. Four themes emerged repeatedly, although they were often expressed from different viewpoints, and with different emphases:

1. Working in partnership: all participants recognised the need to work in partnership for mutual investment and benefit, and to benefit the society and economy in Kazakhstan and the CIS region. These stakeholders include current and prospective students and their families; the government; employers; university managers, teachers and administrators;
2. Questioning the role of universities in an evolving labour market: we heard about the speed of change in the labour market, driven by rapid technological change; increasing globalisation; and government policy and emerging industry sectors. This evolving labour market can be characterised as VUCA¹ (volatile, uncertain, complex, and ambiguous), so “what is and should be the role of universities in student employment outcomes and employability in a VUCA world”?
3. Tension between stability and development: many speakers raised this; how do universities make sure their curricula are educationally robust and at the forefront of disciplinary knowledge, whilst also ensuring these curricula meet the needs and expectations of students and employers? We agreed that employer feedback to universities is absolutely vital to inform curriculum and programme innovation and revisions. The consensus from delegates was that universities should be employer-informed, rather than employer-led to maintain a healthy balance between intellectual independence and employer involvement;
4. Starting early: many speakers presented compelling evidence for careers guidance to begin in school to enable able pupils to aspire to university study and to make wise and informed choices about their study options. And once students are enrolled in university, they must start early with the acquisition of the skills, knowledge and experience, and development of the qualities and attributes that will enable them to move confidently and quickly into graduate-level employment after graduation. We also heard that students need support and guidance with making the transition into higher education from school; as they progress from year to year, and make wise choices about optional modules, work placements; and lastly, finishing their bachelors study and making the transition into the world of work or further study.

1 www.forbes.com. An acronym originally coined by the US military to describe conditions in Afghanistan and Iraq, and now used to describe four challenges we face in our rapidly changing world.

More focus needed ...

Five areas were either under-represented and/or absent from discussions:

1. Education as social good: education at all levels – in schools, TVET and in universities – enables learners to gain explicit skills, understanding and competence across a range of academic and vocational subjects. Whatever their level of educational attainment, students in any national educational system can also gain shared values and a common culture because they have all had these experiences. The Forum would have been strengthened by more emphasis on this meta-theme of education for social cohesion and the economic good;
2. Student experience and the student voice: until the last session on the last day, we had not heard from students about their experiences. When we did, these contributions were very powerful, energising the audience and reminding us why we are educators. Another year, we could represent the student voice more strongly, for example, start the Forum with their experiences to frame the two days; survey university students and recent graduates on their views; record some students on video talking about their experiences, including students from a range of universities, both in Astana and Almaty and the regions;
3. Graduate autonomy vs. training workers: Employability supports students to develop a range of knowledge, skills, behaviours, attributes and attitudes which will enable them to be successful not only in employment but in life. There was a strong sense from speakers that the role of university education was to train workers. Of course, I understand the immediate national need to provide graduates for a buoyant local labour market in which the Minister of Education and Science told us 22% of vacancies are not filled because suitably qualified and committed graduates cannot be found. However, this understandable but short-term focus on training will not enable these graduates to survive and thrive in the labour market during their long working life, when we as their educators are dead and gone. As an illustration, those graduating today in 2015, aged 22, will still be working in 2058, assuming they retire aged 65. We cannot predict what the world of work will be like by then, but one thing we can be sure of, it will not be as it is now. If we over-emphasise *training*, and under-emphasise *lifelong learning for life not just a job*, the risk is that they will lack the necessary autonomy. This would limit their ability to learn for themselves, to analyse their experiences and extract their learning and to have the confidence to push into new sectors and new jobs;
4. 'Graduateness': this is not a word you will find in a dictionary, so I should provide a definition. It is important as it is certainly what employers need, and what students hope for. 'Graduateness' describes the explicit and implicit skills, qualities and knowledge gained from university study that are of lifelong value. For example, academic study will mean graduates can research, analyse, synthesise, evaluate, make judgements, present – they are learning how to learn, and all these skills are immediately transferable to the workplace. Another example would be work experience, either paid or unpaid, part of their academic programme or not – this gives graduates insight and knowledge of the world of work, and help them make good decisions about the sector or company they might apply to for graduate work after graduation;
5. University as a transformative experience: there was a lost opportunity during the Forum to describe university as a transformative experience, rather than a transactional exchange. What do I mean by that? For many students, going to university will be a time of transition

and change: for example, it may be the first time they have lived away from home, or had to shop and cook for themselves. They may have been the cleverest student in their class, and now they are amongst a group of peers who are equally able. University offers the chance to be away from parents, to try new styles, new sports, and to meet different sorts of friends. I am describing a *transformative* experience during which the young person can mature into a young adult, and find out new things about themselves – this is a preparation for life. The *transactional* approach usually fails to provide this transition to adulthood, and at its worst, will make graduates work-ready or trained for only that first job, and unable to navigate the choppy waters of an uncertain and evolving labour market in the medium to long-term.

Employability in the 21st century

Shigeo asked me to present my own views in three key points:

1. An unknown future: Many of you will be familiar with the quotation: “we prepare graduates for jobs that don’t yet exist, using technologies that haven’t been invented in order to solve problems we don’t even know are problems yet”.² And as discussed in the previous section, a VUCA world requires leaders to re-think and re-engineer their organisations³. Whatever our personal views of these predictions, we can be sure that today’s skills and knowledge will not be sufficient for tomorrow’s challenges – and this gives universities both a challenge and an opportunity;
2. Universities, challenge and opportunity: The responsibility for the building blocks of employability lies with the students themselves and with the whole university. The best practice is where everyone in the university works together on a common goal of enabling students to become self-directed and therefore successful scholars and employable graduates. The message is clear from employers, a degree is not enough to secure graduate-level employment⁴. This research demonstrated that employers are looking for ‘4+1’, where the four are: (1) a good degree from a good university as a guarantee of quality; (2) work experience so students can acclimatise quickly to the world of work and become productive immediately; (3) full participation in life at university to demonstrate intangible but necessary qualities that employers want such as being flexible, adaptable, enthusiastic, proactive, able to challenge the status quo; (4) the ability to draw all these things together, “to tell their story” and demonstrate their fit with potential employers. And what is the 1? This is the ability to draw together all this learning and experience about the world of work and themselves into, for example, a good CV, a well written application form, a convincing covering letter, a successful interview. The challenge and opportunity for universities is three-way. Firstly, we need to collaborate with employers on their particular needs, with those who represent particular sectors to gain a sectoral view of impending changes, and with government to understand the societal context. Secondly, we must retain our proximity to and understanding of students. Thirdly, we must retain excellence in research and teaching;
3. Changes in student expectations: our experience at the University of Warwick is that student expectations of study and future work are changing. They want to learn differently; and they expect an experience that is personal, interactive and tailored⁵. They also have

2 Karl Fisch and Scott McLeod, *Shift Happens*, video, 2011

3 Chris Hedges, *The Myth of Human Progress and the Collapse of Complex Societies*, October 2013, www.truth-dig.com

4 Outcomes from the employer strand of the HEFCE-funded King’s Warwick project, 2009-2011

5 Conversations with Sabbatical Officers from the Students’ Union at the University of Warwick, student focus groups, and individual students

different expectations of work. Research by the organisation, Workopolis⁶, has identified that current students see their future work as blended rather than as strongly delineated between work | home/other as many of us do. Their view of work is that the lines between work and play will become blurred; they may not seek the same satisfaction and challenge from work as we do, or define “satisfaction” and “challenge” differently. Part of this change is that in a world of 7 billion people of whom 5 billion have a mobile phone, access to enormous computing power is natural and a right rather than a choice or a phenomenon. They are used to processing multiple sources of information simultaneously, and working in a flexible, non-linear way. They expect their future work to be similar. So this may alter where they work, the hours they work, etc. Our students would characterise this as “taking their place in, and creating their world”. How do universities meet these challenges of students wanting a different learning experience, and anticipating a very different perspective on work?

Challenges for Higher Education

1. Adapt or die: many speakers spoke about the need for universities to embrace change, quoting Charles Darwin: *“It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change.”* How do universities change and evolve, and who (if anyone) can act as our guides?
2. Demand and supply: universities supply graduates; employers supply jobs. If 22% of graduate jobs in Kazakhstan are not filled because employers perceive that suitably qualified and committed graduates are not available, what can both sides of this equation do to help each other? I suspect part of the problem is that graduates are not able to articulate their competency, motivation and potential fit/suitability to employers – are students supported to present themselves well? Are employers clear in job descriptions and adverts? How adept are universities and employers at working together, or is this in its infancy? Other speakers spoke of the difficulty in recruiting suitable graduates to the regions, is this a question for government, or universities and employers, or both?
3. Understand and act upon the web of stakeholder needs: higher education and TVET serve many societal needs, and have complex stakeholder demands. We need to understand these, hold them in balance, and not shy away from their complexity.
4. How to enable early engagement in higher education or TVET: our speakers were clear that schools and higher/further education should work together to ensure improved guidance on subject choices at schools, and choice of degree subject.
5. Innovating with new modes of learning: this covers three inter-linked areas: firstly, the “traditional” student who enters university at 18 or 19, and graduates 4 years later is probably not the model for the future; some may choose to study part-time, and work part-time; some may come to university some years after graduating from high school. Secondly, how future-proofed is our teaching? Is digital literacy embedded in our programmes of study; how much are we embracing the move away from low-level factual learning and focussing on critical thinking and problem-solving? And thirdly, how open are universities and TVET to employers asking them to co-design and co-deliver new modules to up-skill their employees for new types of job?

6 Peter Harris, The 10 skills you will need for the jobs of 2020, 2014, article on www.workopolis.com

6. Changing student and employer expectations: “we must prepare students for their future, not our past”⁷ Universities have an opportunity to embrace change to address employability in the 21st century that connects all the relevant stakeholders, government; current and future students and their families; employers;
7. The implications of students both seeking and creating jobs: these was a lively debate about the rise in student entrepreneurs who will be creating jobs for themselves and others. Are universities ready to support them with enterprise and entrepreneurship skills and opportunities to learn and practise?
8. Defining your university’s value (who you are, whom you serve): Shigeo was clear that it is perfectly acceptable to have a taxonomy of universities. That is, some will serve a local/ regional labour market, some a national market, and others an international market for graduate talent. Equally, some will specialise in particular sectors, whilst others will have a comprehensive offer. Universities should be courageous enough to define themselves, the students they wish to attract, and the employers they want to work with.
9. The challenge of creating work-ready and future-proofed graduates who can take their place in the world: in many ways, this is the big challenge for higher education and TVET.

7 Scott McLeod, Karl Fisch, 2011 ibid



Nazarbayev University (NU) is a brand-new academic institution located in Astana, the capital of Kazakhstan. The University was founded in 2009 with the personal initiative of President Nursultan Nazarbayev to prepare the next generation of leading researchers and professionals.

To achieve quality education and research, the University is collaborating with the leading universities and institutions in developing its schools and centers among which are University of Cambridge, University of Pennsylvania, University College London, Duke University, University of Wisconsin-Madison, National University of Singapore and University of Pittsburgh.

Currently, there are seven schools at Nazarbayev University:

Graduate School of Business	www.gsb.nu.edu.kz
Graduate School of Education	www.gse.nu.edu.kz
Graduate School of Public Policy	www.gspp.nu.edu.kz
School of Engineering	www.seng.nu.edu.kz
School of Medicine	www.nusom.edu.kz
School of Humanities and Social Sciences	www.shss.nu.edu.kz
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