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DEAR READERS

You see the latest issue of *University Education*, in which Ukrainian and foreign experts share the results of their research on current issues and directions of higher education development.

Over the last decade there have been profound changes in the higher education environment: universities are no longer referred to as institutions that provide knowledge to society, but the ones that generate economic, social and innovative development. Today global trends in the sphere of higher education are as follows: increased competition among universities for finance; intensified regional and international scientific and educational cooperation; enhanced coordination of business-academia interaction, extended technological possibilities and implementation of cutting edge technologies to improve the quality of educational services.

In such conditions it is of vital importance for higher educational institutions aspiring to become more competitive to study the experience of world class universities, the results of breakthrough research on university governance, prospects for growth of higher education and experts' recommendations.

It is a big honor for us to draw the readers' attention to the article by Jamil Salmi, the renowned expert in tertiary education. The article reveals the essence and features of research universities as well as their role in global competitiveness and the economic growth of the country. Strategic approaches to the establishment of world class universities in emerging economies as well as university challenges, risks and costs are thoroughly analysed by the famous author.

The article by Thomas Esterman, Director for Governance, Funding and Public Policy of the European University Association, is devoted to such important and urgent topic for Ukraine today as university autonomy. The article highlights the issue of university autonomy in Europe and member countries of the TEMPUS project aimed at developing and modernizing the system of higher education in Armenia, Moldova and Ukraine.

The article by Daniel Schiller acquaints the readers with the organization and ways of financing research activity of German universities, their strategic decisions and financial support given by the government to develop the scientific potential and international competitiveness of the universities.

One of the results of long-term cooperation between the State University of New York and Kyiv National Economic University is a joint article written by Gregory Gardner and



KNEU researchers. It reveals the issues of innovative strategies of the US research universities and their role in the US innovation system. The types and features of university entrepreneurial activity as well as university-business partnerships are analysed.

The results of the research into the issues of university management in the US (Wisconsin-Madison university taken as an example) that can be used in the process of modernization of the higher education system of Ukraine are disclosed in the journal by Dmytro Khutkyy.

The issues of the higher education system of Finland, experience of implementing Bologna process in the universities as well as instruments used to provide high quality curricula development, are revealed in the article by Anastasia Syzenko.

The article by the researchers from Kyiv National Economic University is devoted to the analysis of correlation between higher education and sustainable development in different countries. The current trends in the development of higher education under conditions of sustainable development, the role, functions and the potential of universities in providing sustainable development, the ways of tackling problems of sustainable development with the help of higher education institutions are set forth in the article.

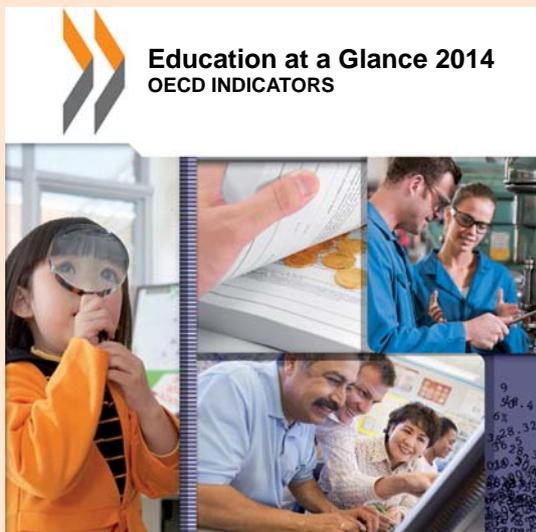
The current state of higher education in Ukraine, the challenges the country faces after the adoption of the Law of Ukraine on Higher Education, reforms and systemic changes necessary to put the Ukrainian system of higher education in line with the European one, are researched in the article by Mychailo Wynnyckyj.

This issue of the journal also presents the results of the research conducted in OECD countries in 2014. It highlights the importance of endowment funds, as instruments of raising finance, peculiarities of on-line education and bench-marking, as the instrument of marketing research and strategic planning, which is widely used by higher education institutions.

Cooperation with higher education institutions is one of the top priorities for leading companies in the global knowledge economy. Its importance is highlighted by Olga Sviridenko, head of the department, for the cooperation with higher education institutions at Microsoft Ukraine.

We hope that journal publications will generate sincere interest of readers and result in further discussions both in future issues of the journal and in academic circles.

EDUCATION AT A GLANCE: 2014 OECD INDICATORS



In the fundamental research entitled «Education at a Glance 2014. OECD Indicators», which covers 34 OECD member countries and 10 partner countries (Argentina, Brazil, China, Colombia, India, Indonesia, Latvia, the Russian Federation, Saudi Arabia and South Africa), among which the data on Colombia and Latvia was provided for the first time ever, 4 areas of national education systems were analysed, namely: the output of educational institutions and the impact of learning; financial and human resources invested in education; access to education, participation and progression; the learning environment and organisation of schools.

At present, at a time when the world is moving slowly out of the worst economic crisis, it is becoming clear that economic growth is not enough to foster social progress, particularly if the growth dividend is not shared equitably. The social cost of the crisis continues to weigh heavily, with more than 46 million people out of work in OECD countries and relative poverty affecting millions more; the gap in the levels of life of the richest and the poorest is widening in many countries, social and economic differences deepen, and this makes the role of education and skills in fostering people's chances in life grow considerably. However, today not everyone can benefit equally from the widening access to education. In such circumstances different countries around the world are looking for ways to spur economic growth in a

more inclusive manner. Therefore, experts at the OECD provide ample evidence of the critical role that education and skills play in fostering social progress, and suggest various tools for decision-making in this sphere.

The analysis of the main tendencies present on the global education services market enabled experts to note that access to education continues to expand: close to 40% of 25-34 year-olds now have a tertiary education, a proportion 15 percentage points larger than that of 55-64 year-olds. At present, many people invest in their education with the aim of improving their chances for a better life.

The results of the research of the level of adults' skills show that not all countries with the largest increase in educational attainment rates are those with the largest increase in the proportion of highly skilled adults. Apparently, as experts note, the levels of proficiency in skills can be very different among adults with similar levels of education.

The labour market in today's world remunerates those with a high level of education and well-developed competencies. On average, over 80% of tertiary-educated adults are employed compared with less than 60% of people with below upper secondary education. But young adults with a tertiary education are very vulnerable to unemployment. The unemployment rate among tertiary-educated adults across OECD countries, stood at an average of 5.0% in 2012 (up from 3.3% in 2008), but among 25-34 year-olds, it was 7.4% (up from 4.6% in 2008). At the same time, the unemployment rate for 25-34 year-olds without an upper secondary education reached 19.8% in 2012 (and even higher in many countries), up from 13.6% in 2008. These numbers reconfirm that the economic crisis hit young, low-educated adults the hardest. And a lack of skills increases the risk of unemployment — even among people with similar levels of education.

The data on earnings also point to a widening gap between those who are more educated and those with less education. If we consider that the average income for 25-64 year-olds with an upper secondary education is represented by an index of 100, the income level for adults without upper secondary education fell to 76 in 2012 (from 80 in 2008), while the average income of tertiary-educated adults rose from 151 in 2012 (from 151 in 2000). This means that, in relative terms, mid-educated adults moved closer in income to those with low levels of

education, which is consistent with the thesis of the «hollowing-out of the middle classes».

Across OECD countries, adults with a tertiary degree earn about 70% more, on average, than those with an upper secondary education. Differences in skills also have an impact on earnings, even among people with the same level of education: on average, a tertiary educated adult who performs at the highest level of literacy proficiency earns about 45% more than a similarly educated adult who performs at the lowest level of literacy.

The risks of low educational attainment and low skills pertain not only to income and employment, but to many other social outcomes as well. There is a 23 percentage-point difference between the proportion of adults with high levels of education who report that they are in good health and the share of adults with low levels of education who report so. The levels of inter-personal trust, participation in volunteer activities, and the belief that an individual can have an impact on the political process are all closely related to both education and skills levels. Those societies that have large shares of low-skilled people are at risk of deterioration in social cohesion and well-being. According to experts, in this case the long-term costs to society – in healthcare, unemployment and security, – accumulate to become overwhelming.

Experts confirm that education and skills are increasingly important factors of social inequality, but simultaneously they are also an indispensable part of the solution to this problem. Education can lift people out of poverty and social exclusion, but in order to do so, educational attainment has to translate into social mobility, the slowdown of which is probably the biggest threat to inclusive growth. It is also noted that this risk is a real one across OECD countries. Comparative data analysis shows that the educational background of parents has a strong influence on the likelihood that the children would acquire a tertiary degree too: 43% of 25-34 year-olds have tertiary education, and only 23% of them are those with low-educated parents; in other words, the benefits of the expansion in education were shared by the middle class, moreover, even if higher education was accessible for them, their upbringing and skills acquired in schools did not help them to move up the social ladder.

Simultaneously, the expansion of education systems in many OECD countries has given 25-34 year-olds an opportunity to attain a higher level of education than their parents. On average across OECD countries 32% of young people have attained a higher level of education than their parents, while only 16% have not attained their parents' education level. Experts say that in all countries except for Estonia, Germany, Norway and Sweden, absolute upward mobility in education is

more common than absolute downward mobility. The expansion of education has been particularly pronounced in France, Ireland, Italy, Korea, Spain and the Russian Federation, where the difference between upward and downward educational mobility is 30 percentage points or more.

Despite the shrinking proportion of public expenditure devoted to education in two-thirds of countries between 2005 and 2011, during the shorter period of 2008-2011 – the peak of the economic crisis – public spending on education grew at a faster rate (or decreased at a slower rate) than public expenditure on all other services in 16 out of the 31 countries. Tertiary institutions and, to a lesser extent, pre-primary institutions obtained the largest proportions of funds from private sources: 31% and 19%, respectively. Public funding on educational institutions, for all levels combined, increased between 2000 and 2011 in all countries except Italy. However, with more households sharing the cost of education, private funding increased at an even greater rate in more than three-quarters of countries.

On average across OECD countries in 2012, 49% of 15-29 year-olds were in education. Of the remaining 51%, 36% held a job, 7% were unemployed. In 2012, more than 4.5 million students were enrolled in tertiary education outside their country of citizenship. Australia, Austria, Luxembourg, New Zealand, Switzerland and the United Kingdom had the highest proportion of international students as a percentage of their total tertiary enrolments.

The research carried out by the OECD contains both average and specific data on all the countries that come under the analysis, and their variations reflect different historical and cultural contexts and demonstrate the achievements and drawbacks of national policies. Some countries do better than others in breaking the cycle of social inequality that leads to inequality in education. The authors of the research stress that education and skills hold the key to future well-being and will be critical to restoring long-term growth, tackling unemployment, promoting competitiveness, and nurturing more inclusive and cohesive societies which need education systems that promote learning and the acquisition of skills in an equitable manner and that support meritocracy and social mobility.

Prepared by **V.Turchaninova**, Senior Lecturer, research associate of the Institute of Higher Education at the Kyiv National Economic University named after Vadym Hetman.

Source: OECD research (2014), «Education at a Glance 2014: OECD Indicators», OECD Publishing. (<http://dx.doi.org/10.1787/eag-2014-en>)

UNIVERSITY ENDOWMENT FUNDS EVENTS



Modern universities that occupy the first lines in most university rankings look at endowment funds as one of the important sources that finance all types of activities within their missions. As the National Association of College and University Business Officers (NACUBO), which investigates university endowment funds in the USA and Canada says, by the start of 2014 there were about 82 universities that had endowment funds of more than USD 1 billion.

Harvard University, which is known to have the biggest endowment fund of USD 32 billion now, created the Harvard Management Company back in 1974 as a unique investment management firm. For the last 20 years their endowment management has delivered an average annual return of more than 12% per year.

But for our readers a more important aspect is the way that endowment funds are being filled. And so we suggest taking a closer look at donations that are directed to these funds.

In February 2014 a self-made billionaire, US investor K.Griffin, announced a donation of USD150 million to Harvard University, which will be the largest single gift ever made to the Ivy League school. Kenneth Griffin, who himself graduated from Harvard 25 years ago, started his hedge fund in a dormitory room at Harvard University. The gift (represents about 3.5% of his estimated net worth at that time) would in the main support the university's financial aid programme — the money will establish 200 Griffin scholars and provide matching funds for a new programme designed to create 600 more scholarships.

Back in 2013 Canadian billionaire John MacBain announced a J75 million donation to the Virginia-based The Rhodes Trust at Oxford University to boost the scholarship programme. The gift, the largest since the establishment of the Scholarship in 1903, will enable the Trust to continue to send future global leaders to the University of Oxford.

Entrepreneurs Michael and Marian Ilitch donated USD 8.5 million to Wayne State University to create the Ilitch Chair for Surgical Innovation within the Department of Surgery at the School of Medicine. The money will establish an unrestricted fund to support research and development in surgical technologies just like development of the world's first patient-specific surgical simulator or «robotic finger with eyes» — surgical innovations under way within the department.

Chinese billionaire couple Pan Shiyi and Zhang Xin, who owns real estate giant SOHO China, are giving USD 100 million to fund disadvantaged Chinese students at top universities across the globe. The first USD 15 million are to go to Harvard University to establish «SOHO China Scholarships» aimed at encouraging less-well-off Chinese students to apply to study overseas. Having also established a foundation to support education in rural areas of China the billionaires were criticized inside the country for this donation.

A USD 1 million grant from David and Charles Koch Foundation to the Catholic University of America to underwrite the hiring of three visiting scholars and a «visiting scholar-practitioner from the business world» was met by criticism in 2013. The Koch brothers are known to be influential supporters of libertarian-style policies that run counter to the church's teaching.

Most donations come to universities from their alumni and most of them are not too big. But the Northwestern University's Kellogg School of



Management received a USD 17 million donation from the estate of alumnus James R. Russell in 2013. The gift is being used to fund a new one-year M.S. in management studies known as the Russell Fellows Program, establish a chaired professorship in the school's finance department and name a study lounge after the Russells in the school's new Lakefront Global Learning Center.

Universities are grateful for donations and try to capture the names of the most generous one in how buildings are called. For instance, this summer the University of Chicago announced naming its new economics building Saieh Hall in honor of the donor — the president of Chile-based CorpGroup Holding Alvaro Saieh who made a «significant donation» and support for faculty, students, visitors and initiatives that fuel collaboration and discoveries with global impact.

Three donors have given the University of Denver a combined sum of USD 40 million, with the largest in the history of the university USD 27 million gift coming from former chancellor Daniel Ritchie. Ritchie's gift is in the form of a working avocado farm. The new building will be called the Daniel Felix Ritchie School of Engineering and Computer Science in honor of his father. The donations will also add to the University of Denver an engineering and computer science building, which will house a new interdisciplinary Science, Technology, Engineering and Mathematics initiative.

Rich endowment gifts are also found in other countries. A Singaporean billionaire, Peter Lim, has donated USD 3 million to the Nanyang Technological University for a new professorship in peace studies based at the S.Rajaratnam School of International Studies. The Government of Singapore will match the gift dollar-for-dollar, bringing the endowment to USD 6 million in total.

In the UK billionaire inventor and industrial designer Sir James Dyson is donating J8 million to the University of Cambridge to provide enhanced

facilities for engineering undergraduates and postgraduates. The money will pay for two facilities: J6 million for a James Dyson building to provide additional research space and J2 million for the Dyson Engineering Design Centre, where undergraduates can develop practical projects, such as making solar-powered cars or underwater vehicles.

There are many other million dollar donations to well-known universities. The President of the Canadian technical consultancy company Tomay, Richard Rogelm and his wife Susan have pledged to donate USD 50 million to the University of Michigan. American casino and real-estate developer Neil Bluhm has donated USD 25 million to his alma mater Northwestern University in Chicago, including USD 15 million dedicated to the law school. David Rubenstein, American financier, philanthropist and co-founder of asset management firm The Carlyle Group, has donated USD 1.9 million to Duke University located in Durham, North Carolina. Billionaire Li Ka-shing's charitable organisation has donated USD 3 million to the School of Medicine at Stanford University to assist in the use of big data to improve health care.

To sum up, endowment gifts are viewed as a part of culture that supports sustainable development of nations and global society through education and research in various areas. Endowment funds are used as an important source for financing university activities in many countries, and Ukraine is still expecting its first million dollar donations from the nation's representatives. The management of endowment fund assets depends on legislation and the wishes of donors.

Prepared by **Denys Ilnytskyy** PhD, Associate Professor, research fellow of the Institute of Higher Education at the Kyiv National Economic University named after Vadym Hetman

Text based on <http://www.wealthx.com/> and university websites

THE FIVE FACES OF ONLINE EDUCATION

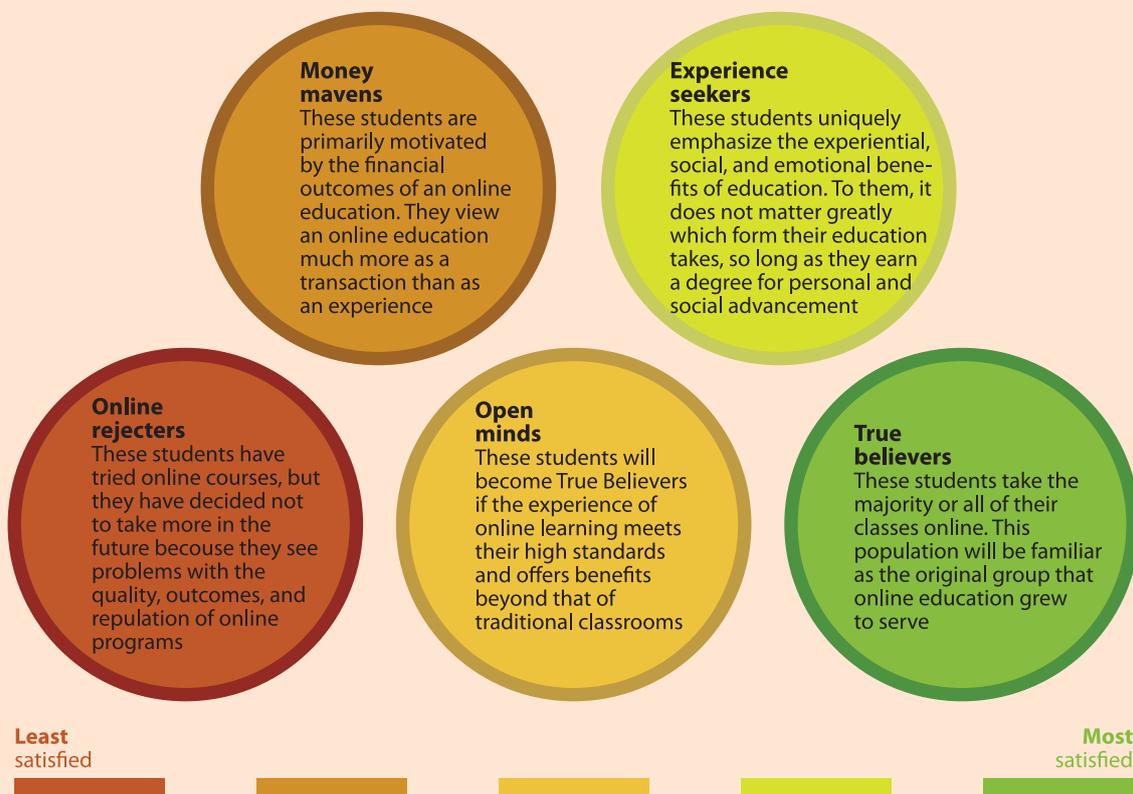
In the not so-distant past only a small number of people who were taking online courses considered them as a good alternative to the traditional education system. Today, online education has already become a leading trend in education.

According to a survey carried out by Boston Consulting Group (BCG) as part of the Consumer Sentiment series, 7 million students are now taking at least one online course. This is an all-time high of 34% of all higher education students. And for more than 3 million students (or 15%) online courses are the primary method of learning. Just about 10 years ago it was only 6%. Today, students choose online courses 5 times more often than traditional ones.

The results of another BCG survey, with 2500 students and 675 parents, confirm these educational trends and provide valuable insights about blended learning, which encapsulates both online and offline elements. The survey showed that across all demographic groups and educational levels students combine courses of all (online, offline, blended) forms to obtain various learning experience. A good example of this is 25% students choosing at least one blended course alongside others.

Meanwhile, the survey revealed that about 54% of all students have difficulty learning exclusively online, primarily due to the lack of contact with teachers, tutors and other students. Students also

The 5 faces of online students today



share some skepticism towards online degrees. At the same time, traditional courses also often fail to satisfy student needs for high quality education, primarily because of their static nature, and so a mixed system of training becomes the most promising.

However, despite the common desire of all students to acquire learning experience by combining different learning models, students' aspirations, goals and expectations from online and blended courses are different as is their satisfaction from online learning. According to these differences BCG researchers distinguished and identified 5 segments within the online education population: Experience Seekers, True Believers, Money Mavens, Online Rejecters and Open Minds.

1. «Experience Seekers». This segment makes up around 23% of all surveyed students and 12% of their parents, that are mostly oriented towards acquiring new experience. Members of this group usually live in cities and study in colleges or corporate courses. They are the most satisfied with online education and consider them a good way to personalize education. Blended learning is preferred among this entire group. About 88% of this group took at least one online course and only 19% of all courses they are currently taking are traditional.

2. «True Believers». This segment is 15% of all students and 19% of their parents, who are active supporters of online learning. Most of them live in rural areas and take a technical education. They are convinced that online education is not inferior or more anti-social than traditional education. They appreciated the opportunity to learn at their own pace more than other groups. Therefore, 76% of vocational courses that they take are either online or blended.

3. «Money Mavens». About 17% of students surveyed and 11% of their parents belong to this segment. More than other groups they are focused on earning and pleased with blended education. Preferably, they are bachelors who focus on receiving a return on investment in their education and consider getting an education as an important

prerequisite for a new job or an increase in their earnings. As 60% of the segment prefer blended learning, it is not surprising that a third of all courses taken by them are blended.

4. «Online Rejecters». This group includes 15% of students and 18% of their parents who are skeptical about the quality, effectiveness and career prospects of online learning. Therefore, they prefer the traditional form of education and just 15% of all courses they take are online courses. The average member of this group lives in the suburbs and studies social subjects.

5. «Open Minds». 30% of surveyed students and 40% of their parents who are focused on maximizing their benefits from online and blended learning. They appreciate the experience they receive from traditional education but also believe that online programs can be of high quality. And so 73% of students surveyed have passed at least one online course, and 53% have passed at least one blended course. It is obvious that this group represents the largest potential for the growth of online education in the near future.

The study proves that the specific needs of each of these groups should be considered as well as the common aspirations of all students wishing to get a high quality education. Educational leaders and institutions should attract appropriate attention to these segments in the context of ever-changing demand. Only those universities who understand how groups of students differ, which segments to target for growth and innovation will have new platforms for innovation, and the potential to transform the ways in which future generations of students learn.

Prepared by **Iryna Kulaga**, docent (associate professor, PhD in economics), senior researcher at the Higher Education Institute of Vadym Hetman KNEU on the basis of Boston Consulting Group (BCG) surveys conducted as part of the Global Consumer Sentiment series

Source: https://www.bcgperspectives.com/content/articles/education_consumer_insight_five_faces_online_education_what_students_parents_want/



On this occasion «University Education» took an interview with Olga Svirydenko, CEO Education Lead, Microsoft Ukraine, who is responsible for cooperation with educational and scientific institutions.

To start with, could you tell us what role educational projects play in the corporate strategy of Microsoft.

Microsoft has always acknowledged the special role that education plays in people's lives. As a leader in technology world, we also see how technology can help students to better reveal their academic potential and for educators to realize their full pedagogical potential. For this, Microsoft created Partners in Learning programs over 10 years ago, which currently works in over 100 countries throughout the world, including Ukraine.

In what directions and forms does Microsoft cooperate with universities?

Microsoft is a strategic partner on the path of educational transformations. We see the world around us changing, the demands of the labor market increasing, the amount of student devices booming and cloud technologies flourishing. All

EDUCATIONAL STRATEGIES IN IT SECTOR – CASE OF MICROSOFT CORPORATION

of these factors put pressure on universities, which most of the time are not ready for the changing environment and try to maintain conservative scenarios that worked in previous decades.

Microsoft works with universities on complex infrastructural projects that help to adjust to a rapidly changing environment, integrate with a number of other technologies and solutions and so enable new teaching methods and educational outcomes. Most important are cloud projects that utilize the collaboration and productivity platform Office 365, integrate social networks through Yammer, help with other solutions on Microsoft Azure.

Another set of projects is related to academic transformations with upgrade of curricula, certification of faculty skills, certification of students to be better prepared for the labor market. We support the Microsoft IT Academy and Microsoft Virtual Academy, which bring great benefits to both educational institutions and individual learners.

What innovative educational projects and programs does Microsoft Corporation offer now, and which of these are the most popular with students?

Microsoft is a leader in IT world, and students appreciate access to our technology through IT Academy, DreamSpark program for STEM departments, ImagineCup contest, BizSpark program to foster entrepreneurship and support start-ups. Our stack of technologies, ones like Office 365 for faculty and students, OneNote Classroom Creator, Windows-based tablet devices also allow for new scenarios for student learning and provide a set of necessary competences for subsequent employability.

Could you identify the difference between projects offered by the Microsoft Corporation and similar ones from other global leaders in the IT sector like Google, IBM, Yandex? What are the advantages and specific nature of your programs?

Microsoft has a long history, wide portfolio of products and expertise in the education industry.

The company's core business is different from that of others and it allows us to offer the best combination of technology that can foster the learning outcomes of educational institutions. Microsoft does not use its educational programs to collect user data, which is crucial for development of other business. Neither is Microsoft tied to only on-premise or cloud solutions, because our technologies enable us to create all types of infrastructures. Having this wide set of technological capabilities allows us to be universal. On the other hand, Microsoft has nourished an education vertical and has a great team of experts who know how technology can be applied in education setting and drive new forms of teaching and learning, thereby supporting every participant of the process, be it a school administrator, teacher or student.

What are the chances for employment within your corporation for those who participated in such programs and projects?

Microsoft is always hiring talented team members. There are two programs, one for university graduates and one for experienced professionals. Both are publicly available at <http://careers.microsoft.com/>

From your point of view, what are the key IT competencies that students who plan careers outside the field of ICT should concentrate on now?

Look around us and see the numbers of consumer devices, social networks, online accessibility and other trends. I would say it is highly unlikely that there will be many jobs that are not related to information and communication technologies. A recent study forecast that in the coming 5 years 77% of jobs will require IT skills. An IDC study from 2014 showed that 80% of vacancies require knowledge of Microsoft Office. So basic IT skills are a must for any student.

Do you believe that the government should provide support in the creation of high-technology laboratories at universities?

Government support is absolutely necessary and Ukraine needs to take the long path of transformations. On the other hand, universities need to invest in upgrading faculty competences, become more transparent towards external partnerships and businesses will play a greater role in giving support to such projects.

How often do professionals of your company participate in and organize such educational events like master-classes, open lectures etc. which take place within universities?

We constantly organize various events, both online and offline. The most well known are DevDays, TechDays, SWIT, Innovative Teachers Forums. Updated schedule is always available on Microsoft.ua/events

What are the strategic priorities in development of Microsoft's educational projects at Ukrainian universities?

Microsoft's overall priority is the cloud and mobility. In Ukraine's universities we still see a lot of challenges in terms of unification of infrastructure and setting up IT services as such. Once university infrastructures become more mature it opens up immense opportunities to develop academic potential through the adoption of cloud technologies, increasing faculty and student collaboration through Office 365 and other cloud services with the use of the existing variety of faculty and student devices.

Does your company support student projects?

Microsoft supports a few global projects for students. YouthSpark ensures the employability of university graduates, while BizSpark supports start-ups and entrepreneurship, ImagineCup contest helps teams to create innovative technological solutions and promote worldwide.

Your company runs an IT-academy. Could you tell us about its features and which hard and soft skills Microsoft offers to students there?

The IT Academy is a set of over 400 courses on the eLearning platform that enables students to get firsthand learning experience and study Microsoft technologies. It is also a set of methodological resources for a faculty if they teach a physical course in their universities. Both a faculty and students can then confirm their competencies by passing international certification. This ensures that students are better prepared for the labor market on graduation, and the faculty stays up to date on knowledge. Students develop team work, collaboration and presentation skills, critical thinking, time-management and another set of skills which are crucial for a good professional.

The Challenge of Establishing World-Class Research Universities in Emerging Economies



Jamil Salmi¹

Abstract

Governments in emerging economies are becoming increasingly aware of the important contribution that high performance research universities make to global competitiveness and economic growth. There is growing recognition of the need to establish one or more world-class research universities that can compete effectively with the best of the best around the world. Contextualizing the drive for world-class higher education institutions and the power of international and domestic university rankings, this article outlines possible strategies and pathways for establishing globally competitive research universities in emerging economies and explores

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the challenges, costs, and risks involved. The article starts by proposing an operational definition of a world-class research university. It then explores three strategic approaches for establishing a world-class research university and reviews the role of university leaders in this context. It concludes by outlining some of the specific challenges faced by emerging economies.

Keywords: world-class research universities; university challenges; emerging economies; competitiveness factors; university strategies.

Introduction

The ranking of world universities published by the *Times Higher Education Supplement*² in September 2005 created a major controversy in Malaysia when it showed the country's top two universities slipping by almost 100 places compared with those of the previous year. Notwithstanding the fact that the big drop was mostly the result of a change in the ranking methodology—which was a little known fact and of limited comfort—the news was so traumatic that there were widespread calls for the establishment of a royal commission of inquiry to investigate the matter. A few weeks later, the Vice-Chancellor of the University of Malaya stepped down. This strong reaction was not out of character for a nation whose current Ninth Development Plan aims at shaping the transformation of the country into a knowledge-based economy, with emphasis on the important contribution of the university sector. And though apparently extreme, this reaction is not uncommon in developing countries around the world.

² THES. (2007). *The Times Higher World University Rankings 2007*. Retrieved March 30, 2008, from: <http://www.thes.co.uk/worldrankings/>.

Preoccupations about university rankings reflect the general recognition that economic growth and global competitiveness are increasingly driven by knowledge and that research universities play a key role in that context. Indeed, rapid advances in science and technology across a wide range of areas—from information and communication technologies (ICTs) to biotechnology to new materials—provide great potential for developing countries to accelerate and strengthen their economic development. The application of knowledge results in more efficient ways of producing goods and services and delivering them more effectively and at lower costs to a greater number of people.

Tertiary education plays a critical role in that context. It helps countries build globally competitive economies by developing a skilled, productive, and flexible labor force and by creating, applying, and spreading new ideas and technologies. A recent global study of patent generation has shown, for example, that universities and research institutes, rather than firms, drive scientific advances in biotechnology¹. Tertiary education institutions can also play a vital role in their local and regional economies².

According to *Constructing Knowledge Societies*, the World Bank's latest policy report on the contribution of tertiary education to sustainable economic development³, high-performing tertiary education systems encompass a wide range of institutional models—not only research universities but also polytechnics, liberal arts colleges, short-duration technical institutes, community colleges, open universities, and so forth—that together produce the variety of skilled workers and employees sought by the labor market. Each type of institution has an important role to play, and achieving a balanced development among the various components of the system is a major preoccupation of many governments.

Within the tertiary education system, research universities play a critical role in training the professionals, high-level specialists, scientists, and researchers needed by the economy and in generating new knowledge in support of the national innovation system⁴. An increasingly pressing priority of many developing countries is therefore to ensure that their top universities are actually operating at the cutting edge of

intellectual and scientific development despite the financial constraints that most of them face.

The main objective of this article is to explore the challenges involved in setting up globally competitive research universities in developing countries that will be expected to compete effectively with the best of the best. Is there a pattern or template that might be followed to allow more rapid advancement to world-class status? What kind of leadership is needed to inspire and drive research institutions? To answer these questions, the article starts by constructing an operational definition of a world-class research university. It then outlines and analyzes possible strategies and pathways for establishing such universities and identifies the multiple challenges, costs, and risks associated with these approaches. It concludes by examining some lessons from recent and ongoing experiences to set up new research universities in emerging economies.

What Does It Mean to Be a World-Class University?

In the past decade, the term «world-class university» has become a catch phrase, not simply for improving the quality of learning and research in tertiary education but also, more important, for developing the capacity to compete in the global tertiary education marketplace through the acquisition, adaptation, and creation of advanced knowledge. With governments keen on maximizing the returns on their investments in research universities, global standing is becoming an increasingly important concern for institutions around the world⁵. The paradox of the world-class university, however, as Altbach has succinctly and accurately observed, is that «everyone wants one, no one knows what it is, and no one knows how to get one»⁶.

Becoming a member of the exclusive group of world-class universities is not achieved by self-declaration; rather, elite status is conferred by the outside world on the basis of international recognition. Until recently, the process involved a subjective qualification, mostly that of reputation. For example, Ivy League universities in the United States (U.S. or U.S.A.), such as Harvard, Yale, or Columbia; the Universities of Oxford and Cambridge in the United Kingdom (U.K.); and the University of Tokyo have traditionally been counted among the exclusive group of elite universities, but no direct and rigorous measure was available to substantiate their superior status in terms of outstanding results such as training

¹ Cookson, C. (2007). Universities drive biotech advancement. *The Financial Times*, 6 May 2007.

² Yusuf, S. & K. Nabeshima (2007). *How Universities Promote Economic Growth*. Washington D.C.: The World Bank.

³ The World Bank. (2002). *Constructing Knowledge Societies: New Challenges for Tertiary Education*. Washington, DC: The World Bank.

⁴ Ibid.

⁵ Williams, R. & Van Dyke, N. (2007). Measuring the international standing of universities with an application to Australian Universities. *Higher Education*, 53, pp. 819-841.

⁶ Altbach, Philip.G. (2004). The Costs and Benefits of World-Class Universities. *Academe*. January-February 2004. Retrieved April 10, 2006, from www.aaup.org.

of graduates, research output, and technology transfer. Even the higher salaries captured by their graduates could be interpreted as a signaling proxy as much as the true value of their education.

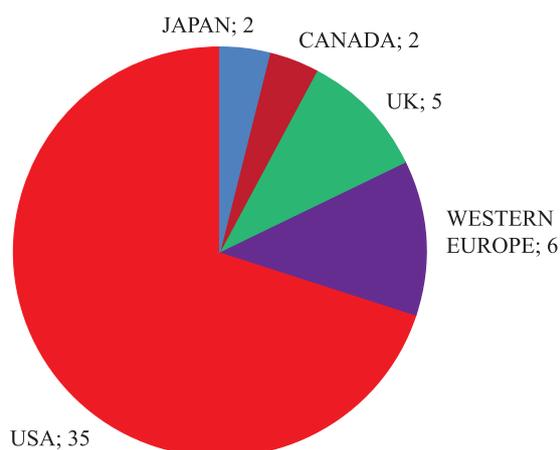
With the proliferation of league tables in the past few years, however, more systematic ways of identifying and classifying world-class universities have appeared¹. Although most of the 60 existing rankings are national rankings categorizing universities within a given country, there have also been attempts to establish international rankings. The two most comprehensive international rankings, allowing for broad comparisons of institutions across national borders, are those prepared by *Times Higher Education* and Shanghai Jiao Tong University (SJTU).

To compare the international stature of institutions, these league tables are constructed by using objective or subjective data (or both) obtained from the universities themselves or from the public domain. The THE ranking selects the top 200 universities in the world. First presented in 2004, the methodology for this ranking focuses most heavily on international reputation, combining subjective inputs (such as peer reviews and employer recruiting surveys), quantitative data (including the numbers of international students and faculty), and the influence of the faculty (as represented by research citations). Operating since 2003, SJTU uses a methodology that focuses on objective indicators exclusively,

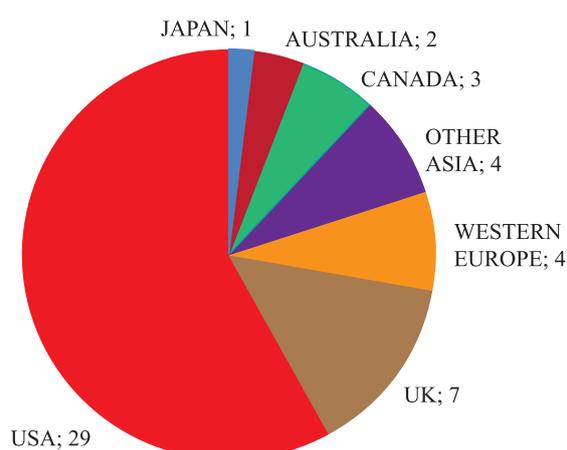
such as the academic and research performance of faculty, alumni, and staff, to identify the top 500 universities in the world. The measures evaluated include publications, citations, and exclusive international awards (such as Nobel Prizes and Fields Medals).

Notwithstanding the serious methodological limitations of any ranking exercise³, world-class universities are recognized in part for their superior outputs. They produce well-qualified graduates who are in high demand on the labor market; they conduct leading-edge research published in top scientific journals; and in the case of science-and-technology-oriented institutions, they contribute to technical innovations through patents and licenses.

As illustrated by Figure 1, most universities recognized as world-class originate from a very small number of countries, mostly Western. In fact, the University of Tokyo is the only non-US, non-UK university among the top 20 in the SJTU ranking. If one considers that there are only between 30 and 50 world-class universities in total, according to the SJTU ranking they all come from a small group of eight North American and Western European countries, Japan being again the only exception. THES has a slightly wider range of countries of origin among the top 50 universities (11 countries), including Hong Kong, China; New Zealand; and Singapore besides the usual North American and Western European nations.



Source: SJTU (2013)²



Source: THES (2013)⁴

Figure 1. Geographical Distribution of World-Class Universities (Top 50 in 2013)

¹ Institute for Higher Education Policy — IHEP (2007). *College and University Ranking Systems: Global Perspectives and American Challenges*. Washington DC.

² Shanghai Jiao Tong University. (2007). *Academic Ranking of World Universities 2007*. Retrieved March 30, 2008, from: <http://ed.sjtu.edu.cn/ranking2006.htm>.

³ Salmi, J. & Saroyan, A. (2007). *League Tables as Policy Instruments: Uses and Misuses*. *Higher Education Management and Policy*. OECD, Paris. 19 (2).

⁴ THES. (2007). *The Times Higher World University Rankings 2007*. Retrieved March 30, 2008, from: <http://www.thes.co.uk/worldrankings/>.

The few scholars who have attempted to define what world-class universities have that regular universities do not possess have identified a number of basic features, such as highly qualified faculty; excellence in research; quality teaching; high levels of government and nongovernment sources of funding; international and highly talented students; academic freedom; well-defined autonomous governance structures; and well-equipped facilities for teaching, research, administration, and (often) student life¹. Recent collaborative research on this theme between U.K. and Chinese universities² has resulted in an even longer list of key attributes, ranging from the international reputation of the university to more abstract concepts such as the university's contribution to society, both very difficult to measure in an objective manner.

In an attempt to propose a more manageable definition of world-class universities, this article makes the case that the superior results of these institutions highly sought graduates, leading-edge research, and dynamic technology transfer can essentially be attributed to three complementary sets of factors (a) a **high concentration of talent** (faculty and students), (b) **abundant resources** to offer a rich learning environment and to conduct advanced research, and (c) **favorable governance** features that encourage strategic vision, innovation, and flexibility and that enable institutions to make decisions and to manage resources without being encumbered by bureaucracy.

Concentration of Talent

The first and perhaps foremost determinant of excellence is the presence of a critical mass of top students and outstanding faculty. World-class universities are able to select the best students and attract the most qualified professors and researchers.

In the sciences, being at the right university—the one where the most state-of-the-art research is being done in the best-equipped labs by the most visible scientists—is extremely important. George Stigler describes this as a snowballing process, where an outstanding scientist gets funded to do exciting research, attracts other faculty, then the best

students—until a critical mass is formed that has an irresistible appeal to any young person entering the field.

Mihaly Csikszentmihalyi³

This has always been the hallmark of the Ivy League universities in the United States or the Universities of Oxford and Cambridge in the United Kingdom. And it is also a feature of the newer world-class universities, such as the National University of Singapore (NUS) or Tsinghua University in China.

Beijing's Tsinghua University said last month it would increase the number of awards this year. Students with high scores, such as champions of each province and winners of international student academic competitions, will be entitled to scholarships of up to 40,000 yuan (\$5,700), more than double that of last year.

*University World News*⁴

Important factors in that respect are the ability and the privilege of these universities to select the most academically qualified students. For example, Peking University, China's top institution of higher learning, admits the 50 best students of each province every year.

One corollary of this observation is that tertiary education institutions in countries where there is little internal mobility of students and faculty are at risk of academic inbreeding. Indeed, universities that rely principally on their own undergraduates to continue into graduate programs or that hire principally their own graduates to join the teaching staff are not likely to be at the leading edge of intellectual development. A 2007 survey of European universities found an inverse correlation between endogamy in faculty hiring and research performance: the universities with the highest degree of endogamy had the lowest research results⁵.

It is also difficult to maintain high selectivity in institutions with rapidly growing student enrollment and fairly open admission policies. The huge size of the leading universities of Latin American countries such as México or Argentina—the Universidad Nacional Autónoma de México (Autonomous University of México, or UNAM) has 190,418 students, and the University of Buenos Aires (UAB) has 279,306—is certainly

¹ Altbach, Philip.G. (2004). The Costs and Benefits of World-Class Universities. *Academe*. January-February 2004. Retrieved April 10, 2006, from www.aaup.org. and Niland, J. (2007). The Challenge of Building World-Class Universities. In Sadlak, J. and Liu, N.C. (eds.), *The World Class University and Ranking: Aiming Beyond Status*. Bucharest: UNESCO-CEPES.

² Alden, J. & G. Lin (2004). Benchmarking the Characteristics of a World-Class University: Developing an International Strategy at University Level. London: The UK Higher Education Leadership Foundation. May 2004.

³ Csikszentmihalyi, M. (1997). *Creativity: Flow and the Psychology of Discovery and Invention*. New York: Harper Collins.

⁴ University World News (2008). China: Growing competition for top students. Retrieved 14 June 2008 from: <http://www.universityworldnews.com>

⁵ Aghion, P., M. Dewatripont, C. Hoxby, A. Mas-Colell, and A. Sapir (2008). «Higher aspirations: An agenda for reforming European universities». *Bruegel Blueprint Series*. Number 5.

a major factor in explaining why these universities have failed to enter the top league, despite having a few excellent departments and research centers that are undoubtedly world-class. At the other extreme, Peking University maintained its overall enrollment at less than 20,000 until the early 2000s and even today has no more than 30,000 students.

World-class universities also tend to have a high proportion of carefully selected graduate students, reflecting their strength in research and the fact that graduate students are closely involved in the research activities of these institutions.

The international dimension is becoming increasingly important in determining the configuration of these elite institutions. This enables them to attract the most talented people, no matter where they come from, and open themselves to new ideas and approaches. At the University of Cambridge, 18 percent of the students are from outside the U.K. or European Union (EU) countries. The U.S. universities ranked at the top of the global surveys also show sizable proportions of foreign academic staff. For instance, the proportion of international faculty at Harvard University, including medical academic staff, is approximately 30 percent. By contrast, only 7 percent of all researchers in France are foreign academics. Unquestionably, the world's best universities enroll and employ large numbers of foreign students and faculty in their search for the most talented.

Abundant Resources

Abundance of resources is the second element that characterizes most world-class universities, in response to the huge costs involved in running a complex, research-intensive university. These universities have four main sources of financing: government budget funding for operational expenditures and research, contract research from public organizations and private firms, the financial returns generated by endowments and gifts, and tuition fees.

In Western Europe, public funding is by far the principal source of finance for teaching and research, although the top U.K. universities have some endowment funds, and «top-up fees» have been introduced in recent years. In Asia, the National University of Singapore, which became a private corporation in 2006, has been the most successful institution in terms of substantial endowment funding. It has managed to build up a sizable portfolio of US\$774 million through effective fund-raising, making it richer than any British university after Cambridge and Oxford. The United States and to a lesser extent Japan, have thriving private research universities.

A comparative analysis of the SJTU rankings of U.S. and Western European universities confirms that level of expenditures is one of the key determinants of performance. Globally, total spending on tertiary education (public and private) represents 3.3 percent of gross domestic product (GDP) in the United States versus only 1.3 percent in the EU25 countries. Per student spending is about US\$54,000 in the United States, compared with US\$13,500 in the European Union¹. Similarly, there are large spending variations among European universities that are correlated with the rankings results of the respective countries. The United Kingdom and Switzerland have relatively well-funded universities and achieve the highest country scores in terms of rankings, while universities from the Southern European countries, including France and Germany, have lower ranking scores associated with low levels of funding². The availability of abundant resources creates a virtuous circle that allows the concerned institutions to attract even more top professors and researchers.

Favorable Governance

The third dimension concerns the overall regulatory framework, the competitive environment, and the degree of academic and managerial autonomy that universities enjoy. The *Economist*³ referred to the tertiary education system in the United States as «the best in the world» and attributed this success not only to its wealth but also to its relative independence from the state, the competitive spirit that encompasses every aspect of it, and its ability to make academic work and production relevant and useful to society. The report observed that the environment in which universities operate fosters competitiveness, unrestrained scientific inquiry, critical thinking, innovation, and creativity. Moreover, institutions that have complete autonomy are also more flexible because they are not bound by cumbersome bureaucracies and externally imposed standards, even in light of the legitimate accountability mechanisms that do bind them.

The comparative study of European and U.S. universities mentioned earlier also found that governance was, along with funding, the other main determinant of rankings. «European universities suffer from poor governance, insufficient autonomy

¹ Aghion, P., M. Dewatripont, C. Hoxby, A. Mas-Colell, and A. Sapir (2008). «Higher aspirations: An agenda for reforming European universities». *Bruegel Blueprint Series*. Number 5.

² Aghion, P., M. Dewatripont, C. Hoxby, A. Mas-Colell, A. Sapir (2007). «Why reform Europe's Universities?» *Bruegel Policy Brief*. Issue 2007/04. September 2007.

³ *Economist* (The) (2005). *Secrets of success*. London: September 10, 2005, Vol. 376, Issue 8443, p. 6.

and often perverse incentives»¹. A subsequent paper reporting on a survey of European universities found that research performance was positively linked to the degree of autonomy of the universities in the sample, especially with regard to budget management, the ability to hire faculty and staff, and the freedom to set salaries². With respect to the composition of university boards, the report concludes that «having significant outside representation on the board may be a necessary condition to ensure that dynamic reforms taking into account long-term institutional interests can be decided upon without undue delay.»

The autonomy elements outlined above are necessary, though not sufficient, to establish and maintain world-class universities. Other crucial governance features are needed, such as inspiring and persistent leaders; a strong strategic vision of where the institution is going; a philosophy of success and excellence; and a culture of constant reflection, organizational learning, and change.

Alignment of Factors

Finally, it is important to stress that it is the combination of these three sets of features—concentration of talent, abundant funding, and appropriate governance—that makes the difference. The dynamic interaction among these three groups of factors is the distinguishing characteristic of high-ranking universities (as illustrated by figure 2).

The results of the recent survey of European universities mentioned above confirm that funding and governance influence performance together. They indicate clearly that the higher-ranked universities tend to enjoy increased management autonomy, which, in turn, increases the efficiency of spending and results in higher research productivity³. A study of the influence of governance arrangements on the research output of public universities in the USA arrives at the same conclusion. When competitive research funding is available, the more autonomous universities tend to be more successful in producing patents⁴.

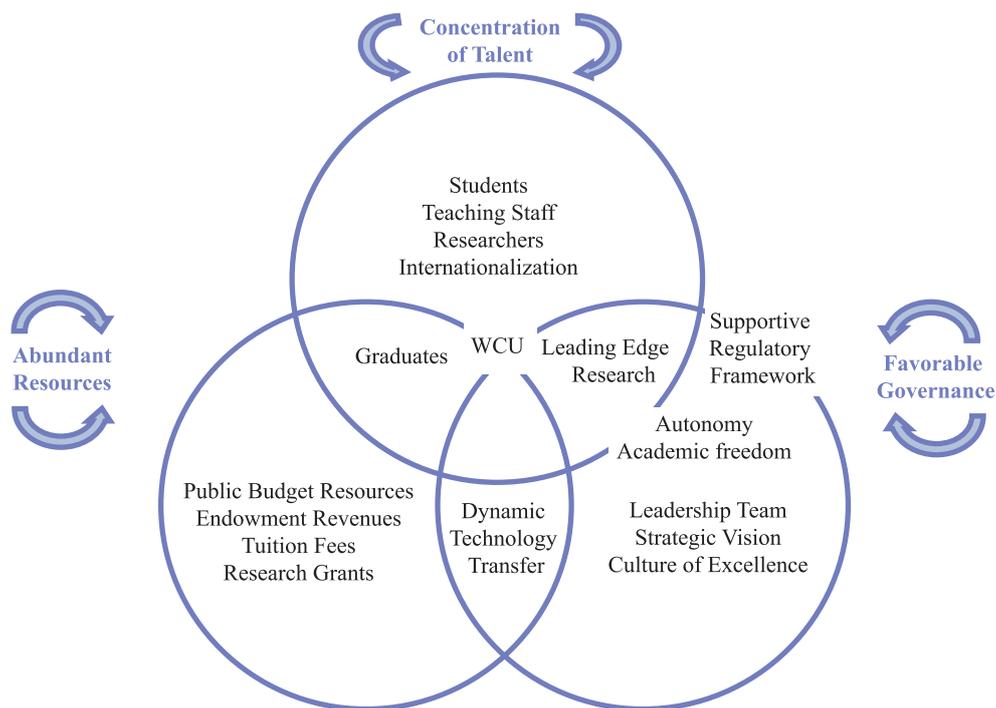


Figure 2. Characteristics of a World-Class University (WCU): Alignment of Key Factors

Source: Elaborated by Jamil Salmi

¹ Aghion, P., M. Dewatripont, C. Hoxby, A. Mas-Colell, A. Sapir (2007). «Why reform Europe's Universities?» *Bruegel Policy Brief*. Issue 2007/04. September 2007.

² Aghion, P., M. Dewatripont, C. Hoxby, A. Mas-Colell, and A. Sapir (2008). «Higher aspirations: An agenda for reforming European universities». *Bruegel Blueprint Series*. Number 5.

³ Ibid.

⁴ Aghion, P., M. Dewatripont, C. Hoxby, A. Mas-Colell, and A. Sapir. (2009). «The Governance and Performance of Research Universities: Evidence from Europe and the U.S.» National Bureau of Economic Research. Working Paper No. 14851, April 2009.

Having an appropriate governance framework without sufficient resources or the ability to attract top talent does not work either. Similarly, just investing money in an institution or making it very selective in terms of student admission is not sufficient to build a world-class university, as illustrated by the case of Brazil's top university, the University of Sro Paulo (USP). Brazil is the 5th-most-populated nation and the 10th largest economy on the planet, it is among the six largest producers of cars in the world, it has world-class companies such as Embraer and Aracruz Celulose, but there is no Brazilian university among the 100 top-ranked universities in the world.

How is it that USP, the country's foremost research university, does not make it into the top group in the international rankings, despite having some of the features of world-class universities? When it was created in 1934, the founders and first leaders of USP made it a point to hire only prominent professors from all over Europe¹. Today, it is the most selective institution in Brazil, it has the highest number of top-rated graduate programs, and every year it produces more PhD graduates than any U.S. university. At the same time, its ability to manage its resources is constrained by rigid civil service regulations, even though it is the richest university in the country. It has very few linkages with the international research community, and only 3 percent of its graduate students are from outside Brazil. The university is very inward looking: most students come from the state of Sro Paulo, and the majority of professors are USP graduates (this latter feature of endogamy being a typical feature of European universities, as discussed earlier). Foreign professors cannot be recruited, by law, and it is forbidden to write a doctoral dissertation in a language other than Portuguese. According to Schwartzman, the key missing element is the absence of a vision of excellence to challenge the status quo and transform the university. The lack of ambitious strategic vision can be observed as much at the national and state government levels as among the university leadership.

Paths to Transformation

Two complementary perspectives need to be considered in examining how to establish world-class research universities. The first dimension, of an external nature, concerns the role of government and the resources that can be made available to enhance the stature of institutions. The second dimension is internal. It has to do with the individual institutions themselves, their

leadership, and the necessary evolution and steps that they need to take to transform themselves into world-class research universities.

The Role of Government

In the past, the role of government in nurturing the growth of world-class universities was not a critical factor. The history of the Ivy League universities in the United States reveals that, by and large, they grew to prominence as a result of incremental progress, rather than by deliberate government intervention. Similarly, the Universities of Oxford and Cambridge evolved over the centuries of their own volition, with variable levels of public funding, but with considerable autonomy in terms of governance, definition of mission, and direction. Today, however, it is unlikely that a world-class university can be rapidly created without a favorable policy environment and direct public initiative and support, if only because of the high costs involved in setting up advanced research facilities and capacities.

International experience shows that three basic strategies can be followed to establish world-class research universities:

- Governments could consider upgrading a small number of existing universities that have the potential of excelling (picking winners).
- Governments could encourage a number of existing institutions to merge and transform into a new university that would achieve the type of synergies corresponding to a world-class research institution (hybrid formula).
- Governments could create new world-class universities from scratch (clean-slate approach).

Upgrading Existing Institutions. One of the main benefits of this first approach is that the costs can be significantly less than those of building new institutions from scratch. This is the strategy followed by China since the early 1980s, with a sequence of carefully targeted reforms and investment programs. Indeed, Peking University and Tsinghua University, China's top two universities, have been granted special privileges by the national authorities, allowing them to select the best students from every province before any other university, much to the consternation of the other leading universities around the country.

But this approach is unlikely to succeed in countries where the governance structure and arrangements that have historically prevented the emergence of world-class universities are not drastically revised. A comparison of the experiences of Malaysia and Singapore can serve to illustrate this point. Because Singapore was initially one of the provinces of the Malaysian Kingdom during the first few years following independence from the British, the contrasting stories of the University of Malaya and of the National University of

¹ Schwartzman, J. (2005). *Brazil's leading university: between intelligentsia, world standards and social inclusion*. Instituto de Estudos do Trabalho e Sociedade.

Singapore (NUS) can be quite instructive, given their common cultural and colonial origins.

At independence, the University of Malaya operated as a two-campus university, one in Kuala Lumpur and the other in Singapore. The former evolved into the flagship University of Malaya from the very beginning, and the other became the University of Singapore, which merged with Nanyang University in 1980 to create NUS. By all global ranking measures, NUS today functions as a true world-class university (ranked 19th by the 2006 *THES*), while the University of Malaya struggles as a second-tier research university (ranked 192nd). In examining the different evolutionary paths of these two institutions, several factors appear to be constraining the University of Malaya's capacity to improve and innovate as effectively as NUS: affirmative action and restrictive admission policies, lower levels of financial support, and tightly controlled immigration regulations regarding foreign faculty.

The affirmative action policy implemented by the Malaysian government in favor of the children of the Malay majority population (*Bumiputras*) has significantly opened up opportunities for that segment of the population. The proportion of Malay students—the Malay population represents 52 percent of the total Malaysian population—went from about 30 percent to two-thirds of the total student population between the early 1970s and the late 1980s. The proportion of Chinese students decreased from 56 to 29 percent over the same period¹.

But the downside of these equity policies was that they prevented the university from being very selective in its student admissions to target the best and brightest in the country. Large numbers of academically qualified Chinese and Indian students, in particular, were unable to attend Malaysia's best universities and had to seek tertiary education abroad, thereby removing important talent from Malaysia. In addition to restrictions among its own population, the Malaysian Ministry of Higher Education places a 5 percent cap on the number of foreign undergraduate students that public universities can enroll.

By contrast, the proportion of foreign students at NUS is 20 percent at the undergraduate level and 43 percent at the graduate level. The cost of their studies is highly subsidized by NUS. The primary consideration for attracting these foreign students is not to generate income, as often happens in U.K. and Australian universities, but to bring in highly qualified individuals who will enrich the pool of students.

NUS is also able to mobilize nearly twice as many financial resources as the University of Malaya (US\$205 million annual budget versus US\$118 million, respectively) through a combination of cost sharing, investment revenue, fund-raising, and government resources. The success of NUS's fund-raising efforts is largely the result of the generous matching-grant program set up by the government in the late 1990s as part of the Thinking Schools, Learning Nation Initiative, which provided a three-to-one matching at the beginning and is now down to one-to-one. As a result, the annual per student expenditures at NUS and the University of Malaya were US\$6,300 and US\$4,053, respectively, in 2006.

Finally, in Malaysia, on one hand, civil service regulations and a rigid financial framework make it difficult, if not impossible, to provide competitive compensation packages to attract the most competent professors and researchers, particularly foreign faculty. NUS, on the other hand, is not bound by similar legal constraints. The PS21 public service reform project in the early 2000s aimed at promoting a culture of excellence and innovation in all public institutions, including the two universities. NUS is therefore able to bring in top researchers and professors from all over the world, pay a global market rate for them, and provide performance incentives to stimulate competition and to retain the best and the brightest. Indeed, a good number of Malaysia's top researchers have been recruited by NUS.

Merging Existing Institutions. The second possible approach to building up a world-class research university consists of promoting mergers among existing institutions. In China, for example, a number of mergers have taken place to consolidate existing institutions. Beijing Medical University merged with Peking University in 2000; similarly, in Shanghai, Fudan University merged with a medical university, and Zhejiang University was created out of the merger of five universities. In 2004, in the United Kingdom, the Victoria University of Manchester (VUM) and the University of Manchester Institute of Science and Technology (UMIST) merged, creating the largest university in the United Kingdom, with the purposefully stated goal of being «top 25 by 2015»². The government of the Russian Federation is also relying on amalgamation as a key policy within its overall strategy of developing elite research universities. In 2007, two pilot federal universities were set up by merging existing institutions in Rostov-on-Don in southern Russia and in the Siberian city of Krasnoyarsk. The two new institutions will also receive additional

¹ Tierney, W. and M. Sirat (2008). Challenges Facing Malaysian Higher Education. *International Higher Education*. Boston: Number 53, Fall 2008, pp. 23-24.

² <http://www.manchester.ac.uk/research/about/strategy/>.

funding to support efforts to allow them to recruit highly qualified researchers and equip state-of-the-art laboratories¹.

The great advantage of mergers is that they can result in stronger institutions able to capitalize on the new synergies that their combined human and financial resources may generate. But mergers can also be risky, potentially aggravating problems instead of resolving them. In the case of France, for example, recently proposed mergers would augment the critical mass of researchers and bring about a higher place in the SJTU ranking that favors research output, but they would not address the fundamental limitations of French universities, including inflexible admission policies, a weak financial basis, rigid governance arrangements, and outdated management practices.

Another danger associated with mergers is that the newly consolidated institution could suffer because of clashing institutional cultures. It has become clear, for example, that the previously mentioned merger between VUM and UMIST has not been as successful as expected or originally perceived. Currently acknowledging a £30 million budget deficit and the likelihood of up to 400 jobs lost on the campus, the University of Manchester has had immediate experience with the complexities of merging². Among the main problems encountered are duplication of staff and curricular offerings, the political challenges of engendering support for the merger by making promises that have proven detrimental to keep, and the short-term absorption of labor contracts and institutional debt. In addition, the newly formed institution, with its commitment to achieving world-class status, invested heavily in hiring «superstar» academic staff and supplying them with correspondingly superstar facilities. This exacerbated further the staffing debt that the institution inherited with the merging of the distinct and separate institutional staffs into the one university. It remains to be seen how Manchester will address these financial, cultural, and interpersonal obstacles while simultaneously maintaining its quest for world-class status.

Creating New Universities. In countries where institutional habits, cumbersome governance structures, and bureaucratic management practices prevent traditional universities from being innovative, creating new universities may be the best approach, provided that it is possible to staff

them with people not influenced by the culture of traditional universities and provided that financial resources are not a constraint. New institutions can emerge from the private sector, or governments can allow new public institutions to operate under a more favorable regulatory framework. One of the earlier success stories in that respect was the establishment of the Indian Institutes of Technology, which, in the past decades, have gradually risen to world-class status.

Kazakhstan is a country intent on following this path as it seeks to make its economy less dependent on oil and more competitive overall. The government has decided to set up a new international university in Astana. The plan is that this university will follow a highly innovative multidisciplinary curriculum designed in cooperation with leading foreign universities. In the same vein, the government of Saudi Arabia announced in late 2007 its plans for a US\$3 billion graduate research university, King Abdullah University of Science and Technology, which would operate outside the purview of the Ministry of Higher Education to allow for greater management autonomy and academic freedom than the regular universities of the kingdom enjoy.

Time is an important dimension that also needs to be factored into the strategic plan of any aspiring world-class university. However, governments are often under pressure to show immediate results, running the risk of taking precipitous decisions and overseeing the fact that the establishment of a strong research university is a long-term process. Building ultra-modern facilities before adequately defining programs, curricula and pedagogical practices that are fully aligned or hiring star researchers from overseas without matching them with a critical mass of national faculty are common mistakes. Developing a culture of excellence in research and teaching does not happen from one day to the next, it requires proper sequencing of interventions, careful balance among the various quantitative and qualitative objectives of the project, and a long-term view.

The creation of new institutions may have the side benefit of stimulating existing ones into becoming more responsive to the global competitive environment. In several countries, the emergence of high-quality private institutions has provoked the existing public universities into becoming more strategically focused. In Uruguay, for example, the venerable University of the Republic—which had exercised a monopoly over tertiary education in the country for 150 years—started a strategic planning process and considered establishing postgraduate programs for the first time only after being confronted in the mid-1990s with competition from newly established private universities. Similarly, in Russia, the creation

¹ Holdworth, N. (2008). Russia: Super League of 'Federal' Universities. *University World News*. 26 October 2008.

² Qureshi, Yakub. (2007). 400 university jobs could go. *Manchester Evening News*. Retrieved May 20, 2007 from: http://www.manchestereveningnews.co.uk/news/education/s/1001/1001469_400_university_jobs_could_go.html.

of the Higher School of Economics and of the Moscow School of Social and Economic Sciences in the 1990s pressured the Department of Economics at the State University of Moscow to revamp its curriculum and get more actively involved in international exchanges.

Strategies at the Institutional Level

The establishment of a world-class research university requires, above all, strong leadership, a bold vision of the institution's mission and goals, and a clearly articulated strategic plan to translate the vision into concrete targets and programs. Universities that aspire to better results engage in an objective assessment of their strengths and areas for improvement, set new stretch goals, and design and implement a renewal plan that can lead to improved performance. By contrast, many institutions have weak leadership, are complacent in their outlook, lack an ambitious vision of a better future, and continue to operate as they have in the past, ending up with a growing performance gap compared with that of their national or international competitors.

Recent research on university leadership suggests that in the case of top research universities, the best-performing institutions have leaders who combine good managerial skills and a successful research career¹. To be able to develop an appropriate vision for the future of the university and to implement this vision in an effective manner, the university leader needs to fully understand the core agenda of the institution and be able to apply the vision with the necessary operational skills.

A case study of the University of Leeds in the United Kingdom illustrates how the arrival of a new leader in 2003 marked the beginning of a conscious effort to reverse a downward trend through carefully planned and implemented strategic change. Rapid growth in student numbers (the second-largest university in the United Kingdom) had led to tensions between the teaching and research missions of the university, resulting in diminishing research income and results. Among the main challenges faced by the new vice-chancellor was the need to create a sense of urgency among the entire university community and to convince everyone of the importance of achieving a better alignment between corporate goals and the contribution of individual faculties and departments with a long tradition of autonomy.

For the University of Leeds, our reputation and profile made this challenge harder. As a great institution we had to demonstrate the vulnerability

of our current position, alongside the importance and achievability of our vision. Staff were not going to engage in a strategy unless its credibility and relevance could be clearly established. To achieve this we used a variety of internal and external measures of performance reputation and ranking to clearly articulate the current position and the vision. . . . Considerable time and effort was dedicated to developing the vision of «by 2015 our distinctive ability to integrate world-class research, scholarship and education will have secured us a place among the top 50 universities in the world.»

Donoghue and Kennerley ²

A crucial element of the vision is the selection of niche domains of research toward which the institution will seek to build and maximize its comparative advantage. In that respect, it is important to underline that a research university—even a world-class university—most likely cannot excel in all areas. Harvard University, widely recognized as the number one institution of higher learning in the world, is not the best-ranked university in all disciplines. Its strengths are especially noted in economics, medical sciences, education, political science, law, business studies, English, and history.

Conclusion

The highest-ranked universities are the ones that make significant contributions to the advancement of knowledge through research, teach with the most innovative curricula and pedagogical methods under the most conducive circumstances, make research an integral component of undergraduate teaching, and produce graduates who stand out because of their success in intensely competitive arenas during their education and (more important) after graduation.

There is no universal recipe or magic formula for «making» a world-class research university. National contexts and institutional models vary widely. Therefore, each country must choose, from among the various possible pathways, a strategy that plays to its strengths and resources. International experience provides a few lessons regarding the key features of such universities—high concentrations of talent, abundance of resources, and flexible governance arrangements—and successful approaches to move in that direction, from upgrading or merging existing institutions to creating new universities altogether.

Furthermore, the transformation of the university system cannot take place in isolation. A long-term vision for creating world-class universities—and its implementation—should be closely articulated

¹ Goodall, A. (2006). The Leaders of the World's Top 100 Universities, *International Higher Education*. Center for International Higher Education. Number 42, Winter 2006, pp. 3-4.

² Donoghue, S. and M. Kennerley (2008). Our Journey Towards World Class Leading Transformational Strategic Change. *Higher Education Management and Policy*. Paris: OECD. Forthcoming.

with (a) the country's overall economic and social development strategy, (b) ongoing changes and planned reforms at the lower levels of the education system, and (c) plans for the development of other types of tertiary education institutions to build an integrated system of teaching, research, and technology-oriented institutions.

Finally, the building pressures and momentum behind the push for world-class research universities must be examined within the proper context to avoid over-dramatization of the value and importance of world-class institutions and distortions in resource allocation patterns within national tertiary education systems. Even in a global knowledge economy, where every nation, both industrial and developing, is seeking to increase its share of the economic pie, the hype surrounding world-class institutions far exceeds the need and capacity for many systems to benefit from such advanced education and research opportunities, at least in the short term.

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Innovative Strategies of American World-Class Research Universities



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Abstract

The article highlights the important role American research universities play in the US innovation system. It examines the types and specific features of university entrepreneurial activities. The necessity of implementing a transdisciplinary approach to research activity and new models of research alliances has been substantiated. The examples of successful cooperation between universities and business have been researched into.

Key words: research universities, university innovation strategy, entrepreneurial education, innovative competitiveness of universities, transdisciplinary approach to research.

In the highly competitive globalized economic environment, the key innovative countries make substantial investments in research and development of higher educational institutions, realizing the crucial role played by research universities in the economic growth of their countries due to training of experts and commercialization of knowledge and technologies. It is well known that research activity stimulates innovation development, resulting in creation of new jobs and increasing a country's living standards and competitiveness. Today, there are a number of studies of the role of innovation in accelerating countries' economic growth. For instance, Professor of Economics at Stanford University P. Klenov and Professor of Economics at the University of California, Berkeley, A. Clare have proved that over 90 per cent of changes in the growth of profit share per employee occur owing to innovations which change the way capital is used⁴. Similarly, professors of Stanford University R. Hall and C. Jones studied 127 countries and discovered that the innovation in the use of capital is 4.6 times more important for economic growth than the amount of such capital⁵.

Innovations also allow the private sector of a country to benefit from new products, services and to enhance export activities. It should be noted that in the United States, export growth doubles employment compared to the employment increases

⁴ Klenov, P. & Clare, A. (2007) The Neoclassical Revival in Growth Economics: Has It Gone Too Far?, *NBER Macroeconomics Annual* (12), pp. 34-40.

⁵ Hall, R. & Charles I. Jones, (1999) Why Do Some Countries Produce So Much More Output Per Worker Than Others. *Quarterly Journal of Economics*, pp. 85-116.

from investment in the strictly domestic market¹. Despite the substantial investments made in the corporate research and development, the private sector does not invest at the level required for the society, mostly because companies do not realize all advantages of innovations. According to the results of numerous studies, the level of the value received by society from corporate R&D and innovation is at least twice as higher as the approximate profit received by the company itself². For example, J. Tewksbury, M. Krendall and W. Crane studied the profitability level of 20 well-known innovations and determined the average profitability factor for the private sector at a rate of 27 percent. However, the average level of profitability for society was determined as 99 percent³. According to Professor of Economics V. Nordhaus from Yale University, inventors receive only 4 percent of the total social benefits and profit earned by their innovations, while the rest of the benefits are received by other companies and the society as a whole⁴.

The higher education system plays a key role in reducing the gap between the level of research activity in the private sector and the level which can be considered best for economic growth of countries. For the last twenty years, the role of higher educational institutions in the U.S. in creating innovations has grown as many companies closed or changed the focus of their research laboratories. As U.S. companies reoriented their research activities into projects with a short payback period, the significance of higher educational institutions in the national innovation system has increased.

Today, U.S. research universities perform 52 percent of all fundamental studies compared with 38 percent in 1960⁵. The research universities train 60 to 80 percent of PhD students in computer, information and communication, engineering and mathematical sciences and 78 to 95 percent of bachelors in the fields required by the American economy. In addition, many characteristics of research universities are coming increasingly to resemble the characteristics of the private sector.

From 1991 to 2009, the number of patent awards from research universities increased from an average of 14 to 68, and the income from the licensing increased from an average of 1.9 million to 13 million U.S. dollars per university. The significant role of research universities is proven by the number of start-ups initiated as a result of the universities' research activity. This number grew from 212 start-ups in 1994 to 705 in 2012⁶.

American universities' research activity has a significant positive effect on the country's economic growth, exerting considerable influence on the development of products and production processes in U.S. companies. E. Mansfield, a Professor of Economics at the University of Pennsylvania, determined that the profitability level for society from investments in universities' research should be at least 40 percent⁷. A study, conducted by the Scientific Coalition consisting of 50 leading U.S. research universities, has shown that the companies that cooperate with research universities achieve much better results in the market⁸. According to the results of a recent analysis conducted by the Stockholm Research Institute, companies which have research relations with research universities apply for more patents and receive more breakthrough and radical innovations than do companies without such relationships.

Research funded by the public sector supplements the research funded by the private sector but does not replace it. A study conducted by the Rand Corporation has shown that each additional dollar invested in a research funded by the government adds 27 cents of private investment to research activities⁹. A study conducted at Carnegie Mellon University has shown that public funding is vital for industrial research activities in some areas and has a significant effect on industrial research activity in the majority of industrial sectors¹⁰.

The development and consolidation of key research universities in the U.S. has played a major role in their achieving leadership in the area of global innovations, in a survey report of the United States National Research Council «*Research Universities and*

¹ Kletzer, L.G. (2002) Imports, Exports, and Jobs: What Does Trade Mean for Employment and Job Loss?, Upjohn Institute for Employment Research.

² Jones, C. & Williams, J. (1998) Measuring the Social Return to R&D. *Quarterly Journal of Economics* 113, (4).

³ Tewksbury, J.G. & Crane, W.E (1980) Measuring the Social Benefits of Innovation. *Science* 209, pp. 658-662

⁴ Nordhaus, W. Schumpeterian Profits and the Alchemist Fallacy (working paper, department of Economics, Yale University), Retrieved from: <http://www.econ.yale.edu/ddp/dd00/ddp0006.pdf>

⁵ National Science Foundation, National Patterns of R&D Resources: 2010-2011 Data Update. (Accessed October 2013), Retrieved from: http://www.nsf.gov/statistics/nsf13318/content.cfm?pub_id=4268

⁶ Association of University Technology Managers. (2013) ATM US Licensing Activity Survey: FY2012. Deerfield.

⁷ Mansfield, E. Academic research and Industrial Innovation: An Update of Empirical Findings, *Research Policy* 26, pp. 773-776.

⁸ Science Coalition, Sparking Economic Growth: how Federally Funded University Research Creates Innovation, New Companies and Jobs (Washington, DC: Science Coalition, 2010), 7 <http://www.pageanster.com>.

⁹ Levy D. M. & Terleckyi N.E. (2012) Effects of Government R&D on Private R&D: A Macroeconomic Analysis, Investment and Productivity, *Bell Journal of Economics*, 14, (2).

¹⁰ Cohen, W.M., Richard R. Nelson R.R. & Walsh, J.P. (2002) Links and Impacts: The Influence of Public Research on Industrial R&D, *Management Science*, 48, (1).

*the Future of America*¹. This survey emphasizes that in the process of economic growth and fulfilment of national goals, American research universities have become the main and arguably the most powerful economic assets of the nation. The Information Technology and Innovation Technology Foundation in its report «25 Recommendations for the 2013 America Competes Act Reauthorization» provide a number of recommendations for the support of research universities. Fourteen out of 25 recommendations address research universities' activities. The report states that universities contribute significantly to the country's innovation and economic development². However, in 2011, U.S. government authorities (of certain states and the federal government) allocated only 0.28 percent of the GDP for research activity of higher educational institutions. As a result, the USA was ranked 24th among 39 countries for spending in this category. Furthermore, the USA is increasingly lagging behind other countries in terms of increasing such funding. The United States was ranked 18th in terms of making changes during the period from 2000 to 2011; and during the period from 2008 to 2011 the country was ranked 22nd in terms of making changes in research spending levels.

Despite the reduction of funding for economic development programs at the level of states by 40 percent since 2009, the funding of research activities during the period from 2010 to 2011 increased by 11.3% and was 1.4 billion U.S. dollars³. One-third of this amount was allocated for research activities of universities, and additional 3.8 billion U.S. dollars were allocated by authorities of states to universities for support of their academic research activity.

Governments of states support fundamental and applied research by universities, entrepreneurial initiatives, and the development of universities' clusters and partnerships with industry. The U.S. National Governors Association has emphasized the «growing expectations that universities will reduce the gap between research and commercialization as one of the main trends of economic development in 2013»⁴.

¹ National Research Council (2012). *Research Universities and the Future of America*. Committee on Research Universities, Board of Higher Education and Workforce, Policy and Global affairs, Washington, DC: The National Academic Press.

² The Information Technology and Innovation Technology Foundation (2013) *25 Recommendations for the 2013 America Competes Act Reauthorization*. Retrieved from www.itif.org/publications/25-recommendations-2013-america-competes-act-reaauthorization.

³ State Science and Technology Institute (2013). *Trends in technology-based economic development: local, state and federal action in 2012*. Westerwille, OH:SSTI.

⁴ National Governors Assosiation. Retrieved from www.nga.org/cms/home/nga-centre-for-best-practicecc/centre-publications/page-ehsw-publications/col2-content/main/content-list/top-trends-in-state-economic-dev.html.

In 2001, universities' innovation strategies were aimed primarily at enhancing faculty research activity and at the organization of partnerships with industry and the licensing of inventions. For the last 10 years, however, the conceptual approaches to student entrepreneurship development have been changed. It happened both by changing university curricula (basic and elective disciplines) and by changing the types of additional activity (accelerators, entrepreneurship centers, business competitions, etc.) conducted by universities. Entrepreneurial strategy has become a key component in almost all research universities and was supported by the US Department of Commerce in its recent report on commercialization of university technologies⁵.

Going beyond basic types of university activity — creating new knowledge in the process of conducting fundamental and applied research and sharing it by publications and teaching — has also become an important element of universities' development. US research universities implement technological educational innovations when theoretical ideas and results of scientific research transform into products or processes which can be used by society and following companies.

For the last 10 years, entrepreneurial education has included implementation of the following two processes: process one — the participation of graduates in educational entrepreneurial programs that accelerate the participation of students in the organization of start-ups. Process two — along with studying, students participate in forums, competitions for the presentation of business plans, the activity of business incubators, summer business schools, innovation clubs, etc. For instance, the University of Arizona demands that all first-year students have an introductory course in entrepreneurship. This course introduces first-year students to the concepts which help develop students' entrepreneurial skills. The University of Arizona offers a wide range of entrepreneurial courses including: social entrepreneurship, innovation environment and design, innovative legal clinic, digital media entrepreneurship and more. In addition to classroom courses, the university enables its students to participate in additional activities. The Edson Student Entrepreneur Initiative allows all students who have completed the entrepreneurial course at undergraduate or graduate level to participate in a competition by applying for a grant of 1,000 to 20,000 dollars

⁵ Office of Innovation and Entrepreneurship Economic Development Administration (2013) *The Innovative and Entrepreneurial University: Higher Education, Innovation and Entrepreneurship in Focus*. Washington, DC: US Department of Commerce.

in order to start their own business. The winners of the competition (20 people annually) receive office premises in the Edson accelerator located in the SkySong innovation center. For the past six years, 102 student enterprises and 19 companies have been created with the help of Arizona University's programs.

The entrepreneurship network program unites small business with student groups at the University of Arizona. While studying at the University, students can obtain entrepreneurial skills by working with professionals. The Innovation Advancement Program of the Sandra Day O'Connor College of Law finances the provision of legal and consulting services to students. The clinic gives student entrepreneurs recommendations for patent protection, licensing and defending their interests in court. The biodesign accelerator at the Biodesign Institute contributes to development of innovations by supporting new technologies at major stages of their development and by transferring them to the private sector as soon as they are ready.

The university's innovation strategy also prescribes the involvement of students in extracurricular activities. In 2010, the university created a program called «Venture Catalyst» as an international business and innovation center for technological innovation activity, cross-disciplinary collaboration and the development of world trade. The project's participants can live, work and recreate in a creative environment. The center enables students, teachers, outstanding entrepreneurs and the directors of companies to work together and communicate with one another. The companies created by students of the University of Arizona can receive the help of a mentor from the representatives of the venture fund available in the centre. This program is managed by the Assistant Vice President of the University responsible for innovations, entrepreneurship, and the Venture Catalyst initiative. The major programs of the Venture Catalyst include: the activity of the Firmes accelerator which fosters entrepreneurship with a competition that is open to all students of US universities and is based on creating enterprises where the primary value comes from intellectual property. The winners can place their companies in SkySong centre or the University of Arizona. The winning team receives \$25,000 US, a chance to locate in a business accelerator, access to mentors, a fast licensing procedure, and access to shared premises.

Among the extracurricular activities is a networking event Techiepaloosa, where lectures are delivered and discussions and intensive communication take place between more than 500 participants for seven hours. An accelerated school of start-ups is opened

for teams of entrepreneurs. Built on the principles of Stanford University, it is conducted for nine weeks and each lesson is supported by practical training at enterprises lasting for 10-15 hours. The program «entrepreneurship hours» prescribes communication with an entrepreneur at a scheduled time. The entrepreneurs involved in the program are members of the «Venture Catalyst» program.

The program of extracurricular activities also provides a possibility to invite a manager with at least 15 years of experience to work with talented students in the early stages of business development. Such managers help the students solve problems during a term of six to 36 months. The experienced specialists hold such positions as Chief Executive Officer, Chief Financial Officer, Chief Expert for Technologies in their home companies.

The problem faced by each research university is how best to use limited resources for performing joint research with companies and organizations for the purpose to improve their competitiveness and innovative potential. To gain the greatest advantage, universities create partnerships on the basis of interdisciplinary and interorganizational programs and focus on research having the greatest potential for new discoveries and cooperation with local population. Such cooperation gives unique results which meet local needs best of all and by joint efforts can be turned into competitive advantages on a global scale. Professor M. Crow, the President of the University of Arizona in 2007, claims that this special feature is of major importance for new research universities and that it can be considered a competitive strategy of a research university as a commercial organization¹. Such models are actively supported by the National Academy of Technical Sciences which recommends close cooperation with new and diverse partners, such as those included in regional clusters of innovation centers². Clusters enable students to study and train with mentors and teachers, to study today's current issues, to train to work in teams, to develop important skills of communication and thinking and to gain hands-on experience in laboratories. Teachers are enabled by clusters to study and apply new interdisciplinary concepts and theories, to increase and improve knowledge of a certain discipline, as well as to benefit from common resources and unions of experts. Interdisciplinary research is more efficient if it is

¹ Crow, M. M. (2007) Enterprise: The path to transformation for emerging public universities. American Council on Education. *The Presidency*, 10(2), pp. 24-28.

² National Academy of Engineering (2005). Engineering research and America's future: Meeting the challenges of a global economy. Committee to Assess the Capacity of the U.S. Engineering Research Enterprise. National Academy of Engineering of The National Academies. Washington DC: National Academies.

conducted within the clusters. In the report issued in 2004 by the Committee on Science, Engineering and Public Policy of the US National Academy of Sciences, interdisciplinary research is defined as a «method of research performed by teams or individuals which combine information, data, techniques, instruments, capabilities, concepts and/or theories from two or more disciplines or specialized fields of knowledge for better understanding or solving problems which cannot be solved within one discipline, industry or area of research practice¹.

In order to strengthen innovative competitiveness of universities, the American Academy of Arts and Sciences in its report «Unleashing America's Research & Innovation Enterprise» has set the following major objectives for higher educational institutions: 1) change interdisciplinary research into transdisciplinary research. 2) encourage synergistic interaction between universities, government and the private sector in the process of carrying out research². Transdisciplinary research is becoming a priority for the development of world-class universities, since they encourage researchers from various areas of activity to work together in order to solve problems of humanity. Universities stimulate research in such a way that the research methods and experience obtained within a certain discipline are distributed to other disciplines in order to ensure conceptual and functional integration. In order to accelerate this process, the American Academy of Arts and Sciences recommends:

- to develop and promote the creation of substantial «knowledge networks» which would allow researchers from various disciplines to apply and focus efforts on solving common problems;

- to expand educational paradigms in order to model transdisciplinary approaches, i.e. to develop/support new and existing research programs of graduates and experienced researchers who integrate the concepts and technologies of both humanity and technical disciplines;

- to increase support of the common research infrastructure, especially where joint research in humanities and technical disciplines is conducted, including funding of the professional staff's activity for infrastructure management;

¹ National Academy of Engineering (2005) Engineering research and America's future: Meeting the challenges of a global economy. Committee to Assess the Capacity of the U.S. Engineering Research Enterprise. National Academy of Engineering of The National Academies. Washington DC: National Academies.

² «Unleashing America's Research & Innovation Enterprise», American Academy of Arts and Sciences, Cambridge, Massachusetts 2013 by the American Academy of Arts and Sciences, 2013. Retrieved from: <http://www.amacad.org/arise2.pdf>.

- to contribute to the policy of employment and career development of staff, which would support joint transdisciplinary research;

- to encourage conduct of transdisciplinary research, while reviewing and improving existing administrative regulations for the optimization of efficiency and dynamism of future inventions.

A successful example of implementing the transdisciplinary approach to research is the Integrated Program for Training Graduates and Researchers of the American Academy of Sciences, the participants of which are the departments of Biological, Computer, Engineering, Mathematical, Physical, Social Sciences, the Polar Research Office, and the International Engineering Research Office. This program was developed for solving problems faced by the United States in training PhDs, engineers and teachers with interdisciplinary education, who will become leaders in conducting global joint research that is beyond traditional disciplines. In order to conduct it, universities create interdependent ecosystems and stimulate fundamental and applied research, as inventions may appear during development in basic research laboratories. Universities, government and the private sector contribute to creation of an inclusive and adaptive environment which integrates and optimally applies unique objectives and best practices from various sectors, since the challenges faced by humanity become a catalyst of transdisciplinary research. It is no coincidence that, in order to respond to the challenges faced by humanity, the Bill and Melinda Gates Foundation and the Office of Science and Technology Policy of the White House recommend:

- to develop and implement new models of research alliances between universities and business;

- to create programs supported by tax incentives, to encourage business to support academic research;

- to develop programs to finance the research ideas proposed by universities and discussed with business consultants;

- to create programs and mechanisms to support cooperation at early stages of research with minimal discussion (or without any discussion) of intellectual property rights;

- to contribute to cooperation between business and universities at all stages of research by developing programs which teach students to work in two environments and enable exchanges for short terms;

- to create research alliances which enable researchers from companies to conduct research in university laboratories and vice versa;

- to establish new priorities for technology transfer between universities and business, while encouraging the exchange of knowledge, resources and people.

The Bay Dole Act of 1980, which entitled universities to own intellectual property, helped revive the high-tech sector of the USA. The adoption of this Act resulted in creation of more than 7200 companies (in 2010 alone, despite the economic downturn, 600 new companies were created in the country) and more than 8800 new products. The university start-ups added 190 billion dollars to the gross domestic product and created more than 275,000 jobs for 9 years¹.

Though technology transfer offices play an important role at universities, they do not bring substantial financial benefits from licensing and patenting. In 2009, approximately 80 percent of 149 universities studied by the Association of University Technology Managers reported that the licensing revenue they received over 10 years was less than \$10 million. The universities were receiving income from one or two licenses, rather than from a constant process of licensing inventions. Therefore today, universities' technology transfer offices are focusing on the mission of knowledge transfer rather than on receiving maximum financial income.

An example of a successful cooperation between a university and business is the Energetic Biotechnology Institute which joins British Petroleum and the University of California, Berkeley, Lawrence Berkeley National Laboratory and the University of Illinois. British Petroleum provides the Energetic Biotechnology Institute with a 10-year grant equalling \$500 million for research in the field of energetic biosciences, focusing on the development of next generation biofuels, as well as on the use of biology in the energy sector. While cooperating with the University in the area where the company had a limited number of experts (e.g. biologists), British Petroleum created a new enterprise with the University without the need to open an additional department of the company. Research proposals are considered by the executive committee which consists of the university's representatives and the corporation's engineers, who evaluate the proposed research, taking into account all the corporation's needs. Only after that, the research proposal is presented for independent review. The intellectual property rights are distributed as follows: British Petroleum owns the rights to any research conducted by the company, while the university owns the rights to any research conducted by the university².

Thus, research strategies become the most important factor in development of US leading universities and influence the country's innovation development.

¹ Shlaes, A. (2011) Three Policies That gave Us the Jobs Economy, *Wall Street Journal*, Retrieved from: <http://online.wsj.com/article/SB1000142452970203914304576628900383779840.html>.

² Energy Biosciences Institute. Retrieved from www.energybiosciencesinstitute.org/.

The traditional functions of the university — to train experts, to create and pass knowledge — are supplemented by efficient cooperation with industry and business. Contemporary research universities have the greatest potential and range for solving problems of mankind by implementing interdisciplinary and transdisciplinary research models.

The US model has become increasingly popular in other nations as an effective method for quickly transitioning the innovations produced by fundamental university research into profitable products, and for linking private sector funding to specific research efforts at universities.

In Britain, university technology incubators have been shown to be an effective way to stimulate the growth of early-stage high growth technology companies³. In June 2013, the British government announced a set of public and private investments into university research projects worth 290 million British Pounds⁴.

In Holland, the University of Twente was able to grow from a small regional university into a powerful research center over a 20 year period, largely through the development of connections with industry and the establishment of a business incubator and research park⁵.

Incubators were identified as excellent tools for building linkages between the research orientations and capabilities of universities in Mexico in 1993 and have continued to develop⁶. The same conclusions were reached in Canada in 2005⁷, and in 2011, research by Professor J. Malfroy showed positive effects on doctoral programs in Australia by joint university-industry research initiatives, although there were some negatives as well⁸.

Conclusion. Clearly US-style linkages between industry and university research efforts and the establishment of university-based business incubators or accelerators offer significant advantages in the development of new innovations and the

³ Patton, P. & Marlow, S. (2011) University technology business incubators: Helping new entrepreneurial firms to learn to grow, *Environment and Planning C: Government Policy*, Vol 29, pp. 911-926.

⁴ 290 Million Pounds for new university and business partnerships, (7 June 2013), *Educational Journal*, Issue 166, pp. 5. AND Schutte, F. (1999) The university-industry relations of an entrepreneurial university: The case of the University of Twente, *Higher Education in Europe*, Vol XXIV, No 1, pp. 47-65.

⁵ Schutte, F. (1999) The university-industry relations of an entrepreneurial university: The case of the University of Twente, *Higher Education in Europe*, Vol XXIV, No 1, pp. 47-65.

⁶ De La Garza, G.F. (1993) The importance of university incubators in Latin America, *European Journal of Education*, Vol 28, No 1, pp. 31-34.

⁷ Bogomolny, L (14 March 2005) The real deal, *Canadian Business*, Vol 78, Issue 6.

⁸ Malfroy, J. (August 2011) The impact of university-industry research on doctoral programs and practices, *Studies in Higher Education*, Vol 36, No 5, pp. 571-584.

growth of innovation-driven national economies. The engagement of students at an early age in entrepreneurial training programs is beneficial as well. The steps that remain for the development of such an approach within Ukraine include both the identification of best practices on a global scale and the development of a set of policies and regulatory support that would allow both industry and universities to conduct research in this fashion.

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UNIVERSITY AUTONOMY IN EUROPE



Thomas Estermann¹

Abstract

The article addresses the questions of University autonomy in Europe and countries of Tempus project ATHENA, which is to contribute to the development, reform and modernisation of higher education systems in Armenia, Moldova and Ukraine. The «institutional autonomy» is defined as constantly changing relations between the state and universities and the differing degree of control exerted by public authorities, which are dependent on particular national contexts and circumstances. Meanwhile autonomy reforms are an important driver of university modernisation. The article provides a general overview of the main trends in the four areas of university autonomy, namely: organisational autonomy, financial autonomy, staffing autonomy and academic autonomy. Finally, the main directions of further developments are identified.

Key words: , autonomy, institutional autonomy, reforms, ATHENA.

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Introduction

Many governments, the university sector and the European Commission have all recognised that increasing university autonomy represents a crucial step towards modernising higher education in the 21st century. The European University Association (EUA) has monitored and analysed the development and impact of autonomy and governance reforms through a wide array of studies as well as through stakeholder debates, conferences and its Institutional Evaluation Programme. With its study, University Autonomy in Europe II – The Scorecard² EUA has provided data on institutional autonomy, which enables university practitioners and policymakers to compare systems more effectively across Europe. It ranks and rates higher education systems according to their degree of autonomy thereby helping to improve higher education systems. Following extensive consultancy in different European Higher Education systems in the last decade, EUA is now implementing the major Tempus project ATHENA³. This project aims to contribute to the development, reform and modernisation of higher education systems in Armenia, Moldova and Ukraine. As a structural measure, it is designed to support structural reform processes and the development of strategic frameworks at the national level. ATHENA ultimately aims to enhance the quality and relevance of higher education systems in the three partner countries. It fosters the transfer of good practices in order to promote efficient and effective governance and funding reforms and tries to build the capacities of universities in the partner countries to modernise the management of financial and human resources. This article will explore the importance of institutional autonomy, identify European trends and analyse some of the challenges related to autonomy for the ATHENA partner countries.

Terminology

Perceptions and terminologies of institutional autonomy vary greatly across Europe, and separating the various components of autonomy to ensure that we are looking at like-for-like is a difficult process. There is a vast amount of literature on the topic, which has led to a wide

² Estermann, T., Nokkala, T., Steinel, M., (2011) University Autonomy in Europe II: The Scorecard, EUA, Brussels.

³ <http://www.athena-tempus.eu/>

range of definitions and concepts of university autonomy¹.

The rules and conditions under which Europe's universities operate are characterised by a high degree of diversity. This variety reflects the multiple approaches to the ongoing search for a balance between autonomy and accountability in response to the demands of society and the changing understanding of public responsibility for higher education. Indeed, the relationship between the state and higher education institutions can take a variety of forms, and it should be stressed that an «ideal» or «one-size-fits-all» model does not exist. In this article therefore, «institutional autonomy» refers to the constantly changing relations between the state and universities and the differing degree of control exerted by public authorities, which are dependent on particular national contexts and circumstances.

Why do universities need autonomy?

There is broad agreement between stakeholders that institutional autonomy is important for modern universities. While this notion has been empirically substantiated in various studies, it should also be noted that autonomy alone is rarely enough. Though institutional autonomy is a crucial precondition that enables universities to achieve their missions in the best possible way, other elements are equally necessary to ensure real success.

The relationship between university autonomy and performance has been widely discussed. For example, in their contribution «Higher Aspirations: an Agenda for Reforming European Universities», Aghion et al. analyse the correlation between performance in rankings, the status of autonomy and levels of public funding. They found «*that universities in high-performing countries typically enjoy some degree of autonomy, whether in hiring or in wage setting*» and that «*the level of budgetary autonomy and research are positively correlated*»².

In addition, autonomy helps to improve quality standards. EUA's Trends IV study found that «*there is clear evidence that success in improving quality within institutions is directly correlated*

with the degree of institutional autonomy»³. This correlation was confirmed by EUA's most recent Trends VI study⁴.

Third, there is a link between autonomy and universities' capacity to attract additional funding. The 2011 EUA study «Financially Sustainable Universities II: European universities diversifying income streams» found that a university's ability to generate additional income relates to the degree of institutional autonomy granted by the regulatory framework in which it operates. This link was established for all dimensions of autonomy, including organisational, financial, staffing and academic autonomy. The data revealed that financial autonomy is most closely correlated with universities' capacity to attract income from additional funding sources. Staffing autonomy, and particularly the freedom to recruit and set salary levels for academic and administrative staff, were also found to be positively linked to the degree of income diversification⁵. Finally, by mitigating the risks associated with an overdependence on any one particular funder, a diversified income structure may, in turn, contribute to the further enhancement of institutional autonomy.

It should be noted that policy-makers tend to regard autonomy reforms as an important driver of university modernisation. And higher education institutions, too, consider the further improvement of university autonomy as a priority. According to EUA's Trends VI report, 43% of university respondents viewed autonomy reform as one of the most important institutional developments in the past decade⁶.

Trends in the different autonomy dimensions

Although stakeholders broadly agree on the importance of university autonomy, success in implementing the necessary reforms has varied considerably across Europe. The following provides a general overview of the main trends in the four areas of university autonomy.

Organisational autonomy

Although higher education institutions in Europe operate in the context of a regulatory framework, the extent and detail of these regulations vary significantly as far as universities'

¹ see for example Clark, B., (1998) *Creating Entrepreneurial Universities: Organizational Pathways of Transformation*, Pergamon-Elsevier, Oxford. AND Salmi, J., (2007) *Autonomy from the State vs Responsiveness to Markets*, *Higher Education Policy*, Vol. 20, pp. 223-242. AND Sporn, B., (2001) *Building Adaptive Universities: Emerging Organisational Forms Based on Experiences of European and US Universities*, *Tertiary Education and Management*, Vol. 7 Issue 2, pp. 121-134. AND Huisman, J., (2007) «The Anatomy of Autonomy», *Higher Education Policy*, Vol. 20, pp. 219-221.

² Aghion, P. et al., (2008) *Higher Aspirations: an agenda for reforming European universities*, *Bruegel Blueprint Series*, Volume V, Belgium, p.5.

³ Reichert, S. & Tauch, C., (2005) *Trends IV: European Universities Implementing Bologna*, EUA, Brussels, p.7.

⁴ Sursock, A., Smidt, H. (2010) *Trends 2010: A decade of change in European higher education*, EUA, Brussels, 2010. Retrieved from: http://www.ond.vlaanderen.be/hogeronderwijs/bologna/2010_conference/documents/EUA_Trends_2010.pdf.

⁵ Estermann, T., Bennetot Pruvot, E., (2011) *Financially Sustainable Universities II: European universities diversifying income streams*, EUA, Brussels.

⁶ Sursock, A., Smidt, H. (2010), p.18.

organisational autonomy is concerned. In the majority of countries, institutions are relatively free to decide on their administrative structures. Their capacity to shape their internal academic structures within this legal framework is more restricted.

In addition, there is a trend towards the inclusion of external members in the institutional decision-making bodies, especially where universities have dual governance structures. While this is seen as an important accountability measure, it also clearly serves other, more strategic, purposes. Indeed, external members in university governing bodies are frequently selected to foster links with industry and other sectors (Figure. 1).

As far as leadership is concerned, the shift towards more CEO-type rectors in a number of Western European countries goes hand in hand with greater autonomy in management and the capacity for universities to design their own organisational structures. On the other hand, more traditional models still exist, in particular in Southern and Eastern Europe, in which the rector is a «primus inter pares» who is selected by and comes from the internal academic community.

Finally, dual governance structures — with some type of division of power between bodies, and usually comprising a board or council and a senate — as opposed to unitary structures, are on the rise.

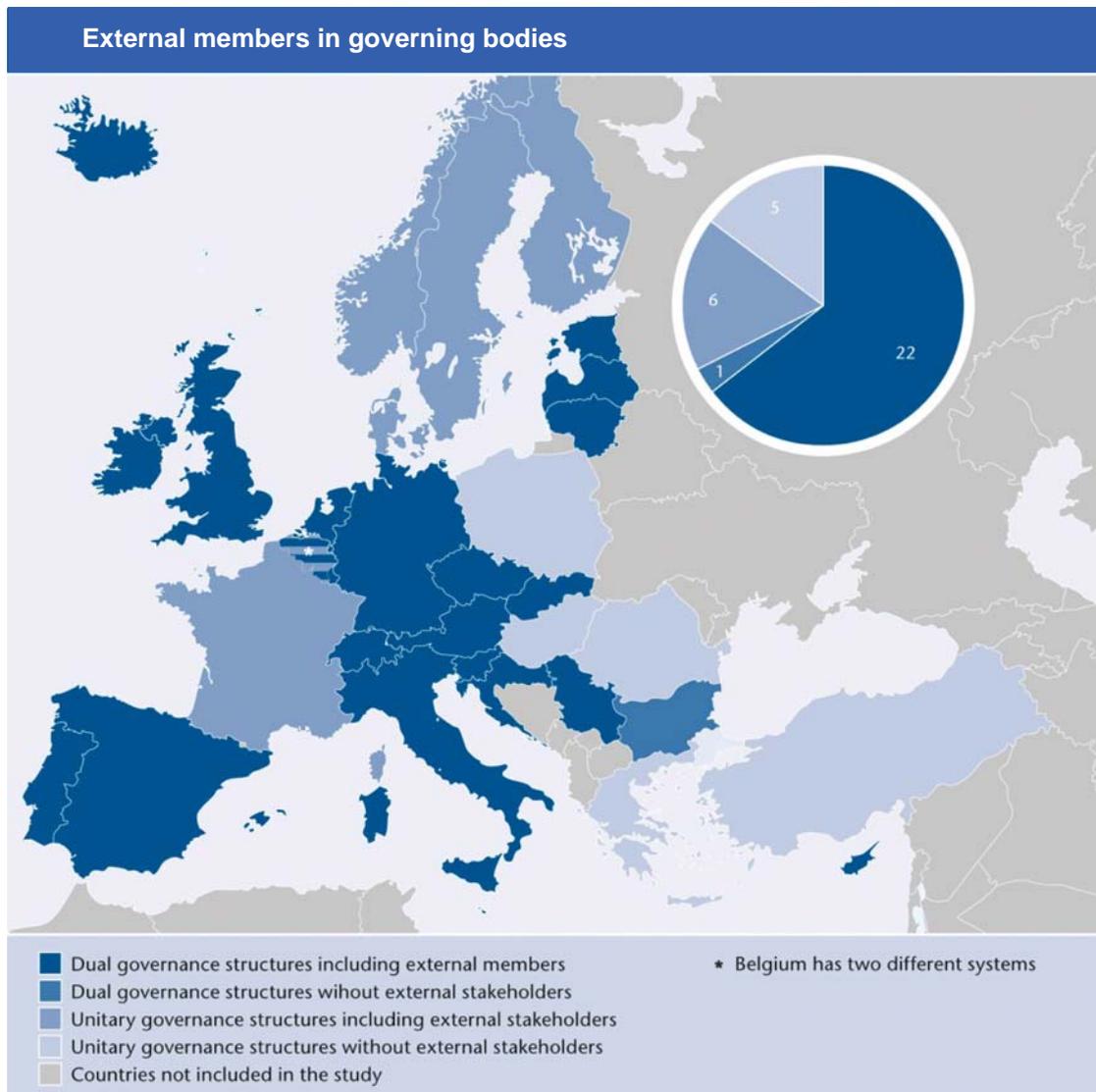


Figure 1. External members in governing bodies in European universities

In comparison to the majority of European Higher Education systems, the three participating ATHENA countries have more regulations and restrictions in this dimension. The movement towards including independent external stakeholders, an independent selection of the leadership and more freedom in the development of academic structures will be areas that need specific attention in further reform processes in these countries.

Financial autonomy

In a majority of European countries, universities receive their funding in the form of block grants. In some systems, line-item budgets are still used, and institutions are thus unable to shift funds between budget lines. This is mainly the case in certain Eastern European and Eastern Mediterranean countries. In a small number of cases, even self-generated revenue is strictly regulated.

While universities in most systems are allowed to borrow money, laws specify certain restrictions, especially in Northern Europe: they may prescribe the maximum available amount, or require the authorisation by an external authority.

Only in half of the surveyed countries are universities allowed to own their buildings. Even those who do own their facilities may not automatically decide on investing in real estate, nor are they necessarily free to sell their assets. Restrictions range from requiring the approval of an external authority to complete inability to sell.

In many European systems, universities can collect tuition fees or administrative charges from at least part of the student population. Nevertheless, this does not mean that these fees reflect a significant contribution to the costs of education or an important source of income. In most cases, additional limitations are placed on the ability of universities to set fees as a means of generating income.

When all aspects of financial autonomy are taken together, Western European countries seem to benefit from greater freedom than their Eastern European counterparts. In general, universities in Western Europe are more autonomous in how they use the public funding they receive, but less so with regards to raising tuition fees. Eastern European countries tend to be less autonomous in the use of their public budgets, but are often able to decide on privately-funded study places and use the fees the latter generate.

The three participating ATHENA countries have a similar pattern in this dimension. On the one hand there is a greater freedom to collect fees from students, while on the other hand there are restrictions on the allocation mechanisms, the ability to keep surplus and to borrow money.

Above all, the management of university finances is subject to excessively burdensome bureaucracy, which limits efficient management of resources.

Staffing autonomy

In many European countries, universities are gaining greater flexibility in dealing with staffing issues, as staff are being paid and/or employed directly by the university rather than by the state. However, the decisions on individual salaries are still to a large degree controlled by the government. In almost half of the countries studied, all or a majority of staff has civil servant status, which underlines the sustained need for more flexible forms of employment for university staff.

The analysis also shows that there are significant differences in the recruitment of staff, ranging from a considerable degree of freedom to formalised procedures that entail an external approval, sometimes by the country's highest authorities. Although this may be a formality in some cases, it nevertheless impacts on the length of the recruitment procedure and therefore on the ability to act quickly in a competitive and increasingly international recruitment environment. Some Mediterranean countries have very little freedom with regards to staffing matters, as they are unable to determine the number of staff they recruit and hence lack control over overall salary costs. Individual salary levels may even be determined by national authorities.

The ATHENA participating countries seem to have more formal autonomy here than in the other dimensions. However, in practice informal intervention of public authorities effectively limits the universities' margin for manoeuvre.

Academic autonomy

In a majority of European countries, universities are essentially free to develop their academic profile, although restrictions remain in other areas of academic autonomy. The introduction of new programmes usually requires some form of approval by the relevant ministry or by another public authority and is often tied to budget negotiations, which demonstrates the interdependence of different dimensions of autonomy. Universities are generally free to close programmes independently; only in a small number of systems does this matter have to be negotiated with the pertinent ministry.

In most countries, admission to higher education institutions is unrestricted for all students that meet the basic entry-level requirements (usually a secondary education qualification and/or a national matriculation exam). Only in a minority of countries are universities free to decide on the overall number of students to take in. In most cases, overall numbers are either determined by the relevant public authorities or decided jointly

by the public authority and the university. In a third of the countries analysed, universities can freely decide on the number of study places per discipline. However, the allocation in some fields may be subject to negotiations with an external authority, or set within the accreditation procedure.

Academic autonomy is the area where ATHENA participating countries lack most freedom. This concerns restrictions on the number of student places, heavy accreditation and licensing procedures and, in particular, the inclusion of state-mandated content in study programmes. Reform processes need to address these limitations and restrictions.

Conclusion: What else is needed to exploit autonomy?

Although the institutional freedom of European universities has generally increased, a number of countries still grant their higher education institutions too little autonomy and thereby restrain their performance.

It is particularly important to underline the strong interrelations between different autonomy areas: if universities are constrained in their financial freedom of action, other dimensions of autonomy, such as organisational, staffing and academic autonomy, may be severely limited by implication. Policy makers should adopt a holistic approach to autonomy reforms, taking account of all dimensions of institutional autonomy.

Insufficient funding can severely limit the benefits of institutional autonomy. In Europe the economic crisis has had a profound effect on the sector, sometimes leading to steps back in previously granted autonomy. In a number of systems, national governments have gone back to resorting to more direct steering mechanisms, while tighter public budgets have generated heavier reporting procedures. In some countries, short-term reactions to the crisis have also translated into drastic public funding cuts, putting strong financial pressure on universities. Although institutional autonomy is crucial, its full benefits cannot be reaped without a firm commitment to stable and sufficient university funding.

The low level of public funding in all three ATHENA participating countries is problematic and represents a particular challenge. Reform processes often lack appropriate implementation procedures and, considering the lack of general funding, support to implement reforms is often scarce. It will be of crucial importance to develop a long-term vision on how more money can be channelled into higher education and research. To maximise funding sustainability via income diversification, there will need to be a balanced

mixture of both more public and private resources. In order to increase the percentage of private income sources, public authorities need to develop appropriate incentive mechanisms.

There also remains a frequent gap between formal autonomy – autonomy «on paper» – and a university's actual ability to act independently. Heavy accountability measures curtail university autonomy, highlighting the importance of striking a balance between institutional freedom and adequate accountability tools. In the three ATHENA participating countries, reducing bureaucracy in financial management and procurement will be an important element in moving towards more efficient systems.

Finally, reforms in the field of governance and autonomy will not be successful unless they are accompanied by measures aimed at building institutional capacities and human resources. The need for efficient and effective management and leadership and for renewed technical and specialist expertise in a variety of areas must be addressed if universities are to respond to the new demands placed on them. Crucially, this issue needs to be dealt with jointly, both by universities and the relevant public authorities.

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Research at Universities in Germany



Dr. Daniel Schiller¹

Abstract

In Germany, all universities have the task to carry out both research and teaching. However, due to a lack of differentiation and competition combined with chronic underfunding, research quality and attractiveness of the research environment at most universities did not keep up with public research institutes in Germany and lost ground at the global scale. This article discusses reasons for the state of university research in Germany and assesses the strategies that have been applied to improve research at German universities recently, in particular the Excellence Initiative.

Keywords: higher education system, research funding, excellence initiative, Germany.

Overview of public research in Germany

The German public research system consists of approximately 400 public higher education institutions, thereof 100 full universities, 200 universities of applied sciences (Fachhochschulen), and 100 other universities, e.g. universities of fine arts². All universities have the task to conduct both teaching and research, but with a distinct division of labour that is specific for the German higher education system. Teaching and research

are of same importance at all full universities; they are conducting basic and applied research and are allowed to grant doctoral degrees. Universities of applied sciences focus mainly on teaching and to a lesser degree on research with a focus on applied sciences. This division of labour allowed German higher education to meet the different requirements for university graduates in industry, science, and government occupations. More recently, there are discussions to strengthen research at universities of applied sciences and to allow them to grant doctoral degrees³. The remainder of this paper focuses on full universities because of their stronger focus on research.

In addition to universities, a major part of public research activities is carried out by public research institutes independently from universities. The largest institutes are part of four research organizations, i.e. Max Planck Gesellschaft, Fraunhofer Gesellschaft, Helmholtz Association, and Leibniz Association. While Max Planck and Helmholtz Institutes focus on basic research, Fraunhofer Institutes carry out applied research often in cooperation with industry².

Education policy is almost exclusively a responsibility of the German *Länder* (federal states) since the reform of federalism in Germany in 2006, while the public research institutes mentioned above receive their funding jointly from the states and the federal government. Each of the sixteen state governments is providing institutional funding to the universities within their jurisdiction. The federal government is only allowed to provide additional funding for research on a temporary base. This situation is now viewed as problematic by many university administrators because of the limited ability of many federal states to provide sufficient funding to universities and the disadvantages for universities in providing an attractive environment for research in comparison to public research institutes which receive additional funding from the federal government. Thus, the sole responsibility of the *Länder* for university education is at the moment heavily debated and it is quite likely that the federal

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² BMBF, 2012: Federal Report on Research and Innovation. Federal Ministry of Education and Research. Berlin.

³ Wissenschaftsrat (2010): Empfehlungen zur Rolle der Fachhochschulen im Hochschulsystem. Berlin.

government will be allowed to provide funding directly to the universities on a permanent basis in the coming years.

Main features of research at German universities

The German university system is characterised by the Humboldtian ideal which includes, on the one hand, the unity of research and teaching and, on the other hand, a considerable degree of academic freedom for the individual scientist. The unity of research and teaching is based on the assumption that the quality of teaching is increased if the teachers are teaching contents and methods which they apply themselves in state-of-the-art research projects. Therefore, high quality research at universities is the prerequisite for high quality teaching. This argumentation is behind the need to strengthen research at German universities.

While all full universities in Germany are research universities by definition and the official mission of almost all academic staff comprises research and teaching to a similar degree, several issues related to research at German universities put this definition into question. These issues can be summarised by a lack of differentiation and competition¹.

The claim that all scientists in all disciplines at each university should focus on research and teaching in a similar way tends to ignore two important facts: First, people are different. Some are better researchers, while some are better teachers. Second, research quality is positively affected if a critical mass of excellent researchers works together in one place. Therefore, a certain differentiation among individuals and among departments within universities might improve the overall research quality, while the unity of research and teaching remains intact. However, the lack of competition within the German university systems impedes the identification of the best research groups in each discipline and a higher degree of differentiation². In addition, existing differences in terms of quality among universities and disciplines are not made transparent for outsiders because there is no research assessment system which compares the performance within a discipline across all universities in Germany. Comparative assessments are only carried out among universities within the same federal state or in an informal way by think tanks and newspapers³.

Funding for universities and for faculties and institutes within universities is still mainly input-oriented and not based on performance criteria.

Some outcome-oriented, competitive elements have complemented input-oriented indicators recently, but they play a marginal role at most universities and faculties. Funding for research and teaching is largely paid from public taxes, while less than ten percent of the expenditures for higher education are from private sources. This is a very low figure by international comparison. The share of income distributed through performance-based funding models does not exceed five percent on average⁴.

Recently, several measures to modernise the German university system and to make it more efficient have been discussed⁵. Besides a larger degree of competition and differentiation as mentioned above, the chronic underfunding has to come to an end and the administrative system needs to be reformed, e.g. by deregulating the state-run bureaucracy and by introducing professional science management. A considerable degree of academic freedom for the individual scientist is deemed to be an important requirement for unleashing their creative potential. But, at the same time, an incentive system based on outcome indicators and performance is needed to ensure that a system that is strongly based on intrinsic motivation produces outcomes that are efficient for the university as an organisation and for society as the ultimate stakeholder of university research.

The need for these reforms is further substantiated by the assessment of the research environment at German universities by foreign scientists in Germany and by German scientists who moved abroad⁶. Despite the fact that the quality of research at many university departments is still very good and some are able to achieve an excellent performance at the international scale, the attractiveness for researchers is reduced due to several reasons. Career options for junior scientists are limited because of the lack of permanent or tenure-track positions. Researchers have to deal with a lot of administrative tasks because of the lack of administrative staff and professional science management. Faculties and institutes are organised hierarchically and independent research of junior scientists faces barriers. As a result, Germany is often not the first choice for foreign researchers, particularly for junior researchers⁷. However, the attractiveness among senior researchers who can apply directly for permanent positions as a professor is higher.

¹ Liefner, I. (2003): 469-490. AND Pritchard, R. (2006), pp. 90-112. AND Schiller, D. (2011), pp. 109-121.

² Schiller, D. (2011), pp. 109-121.

³ Ibid.

⁴ Liefner, I. (2003), pp. 469-490. AND Liefner, I., L. Schätzl and T. Schröder (2004), pp. 23-38.

⁵ Pritchard, R. (2006), pp. 90-112.

⁶ Schiller, D. & J. Revilla Diez (2012), pp. 1319-1332. AND Schiller, D. & J. Revilla Diez (2010), pp. 275-294.

⁷ DAAD and DZHW (2014).

Research funding in Germany

Research is a mission of all universities in Germany, however the funding provided to carry out research projects from the institutional budget by the state governments is low. Research at universities, therefore, depends largely on external research grant. The main agency which provides external research grants on a competitive basis in all fields of science and humanities is the German Research Foundation (DFG – Deutsche Forschungsgemeinschaft). The DFG is jointly funded by the federal government (67%) and by the states (33%) and realised a growth of its budget during recent years. DFG is funding approx. 30,000 projects with a total volume of €2.5 billion per year¹. The voting system and other procedural regulations of the DFG guarantee science-driven decisions. The research funding model can be considered as an example of good practice at the international level.

Decisions by DFG about research projects are science-driven and the procedures are to a large degree based on self-organisation. The decisions about research projects are prepared by review boards which consist of elected members from the respective discipline based on scientific peer review. In addition, scientific members have a majority in the main decision-making body, the Joint Committee.

DFG is providing most of its research grants within different lines of funding which comprise individual grants programmes (33% of funding), coordinated programmes (41%), and the excellence initiative (17%, see next section). The most important individual funding programmes are individual grants for a specific project and a limited number of researchers (29%), individual scholarships (3%) for junior scientists (Emmy Noether Programme) and senior scientists (Heisenberg Programme). Among the coordinated programmes, collaborative research centres are the main funding line (22%). In this programme, outstanding research programmes at universities are supported for a period of up to twelve years. Research units (5%) are funded for a period of up to six years and comprise a limited number of researchers who work on a clearly structured project which extends the size and duration of an individual research grant. Priority programmes (7%) foster the cooperation of researchers from all over Germany on a specific topic which is given a funding priority by DFG. Research Training Groups (5%) support the qualification of doctoral researchers within the framework of a focused research programme and a structured training strategy for a period of up to nine years².

The distribution of DFG grants among universities and disciplines is well documented and provides some information on their performance. Even though research funding from DFG is only an input criteria, it can be used as an indicator for the quality of research because it is provided based on a peer review process and requires previously acquired excellence in the field of research. 88% of the awards granted between 2008 and 2010 are concentrated among 40 universities, while the top ten recipients receive 37% of the funding. Among the top recipients of DFG awards are RWTH Aachen, LMU Munich, FU Berlin, TU Munich, Heidelberg University. Each of these five universities received about €250 million DFG funding over the three-year period³.

Besides the DFG, other important funding sources for research at universities are private foundations (the largest is Volkswagen Foundation with a funding volume of €160 million per year), the Federal Ministry of Education and Research (BMBF), and the European Union, e.g. Horizon 2020. In addition, income for carrying out research projects is generated from collaboration with industry⁴.

The research policy of BMBF has been aligned to the principles of the so-called High-Tech Strategy (HTS) with the aim to ensure that Germany becomes a pioneer in terms of solving global challenges and providing answers to urgent questions posed by the 21st century. The HTS is the first national innovation strategy on a comprehensive basis. It summarises existing scientific-technical competences and aims to expand them. Key areas of support comprise five fields: climate/energy, health/nutrition, mobility, security, and communication⁵. While the HTS strengthens the mission-oriented nature of research funding by BMBF and has a strong impact on applied research projects, research funding by DFG remains curiosity-driven and project are assessed based on the scientific quality of proposals⁶. A large part of BMBF's annual budget for R&D projects (€3.4 billion) is allocated to the private sector⁷. Therefore, DFG is still the most important funding source for research at universities.

Universities in Germany receive a comparatively high amount of income from technology transfer⁶. About 25% of external grants are from industry. Among the full universities, technical universities are relatively more intensely cooperating with industry. Universities of applied sciences also

¹ DFG (2013a).

² DFG (2013b).

³ Ibid.

⁴ BMBF, 2012.

⁵ Ibid.

⁶ Schiller, D. (2011), pp. 109-121.

⁷ BMBF, 2012.

cooperate more intensely with industry than full universities on average¹. University-industry linkages in Germany mainly comprise short-term projects, e.g. consulting and contract research, to solve specific problems in the firm. Most transfer activities are based on direct, often informal contacts between researchers at universities and industry staff. Long-term, open-ended collaborations are often hindered by bureaucratic barriers to the creation of organisational models for collaborative research, e.g. joint research centres, public-private-partnerships¹. Up to now, income from research projects with industry does not rank very high in performance-based funding formulas².

Overall, the research funding landscape is well developed in Germany. However, competition for research grants has also increased because of the limited resources for research provided by the universities themselves. Therefore, larger increases of the budgets of research funding organisations are necessary to compensate for the chronic underfunding of universities from the state budgets. While the budget of the DFG grew during the last years³, foundations are suffering from the low interest rates received from their endowments and the research budget of the EU has been reduced as a result of the financial crisis. An often mentioned critique of the growing importance of external research grants is that these grants favour mainstream topics, less risky research designs, and increase barriers for junior scientists who do not yet possess a strong record in their subject area.

The German Excellence Initiative

Quality differences between German universities have traditionally been small, ignored or minimised. Differences in quality and scope were not apparent to outsiders, but were at best known to the scientific community. The Excellence Initiative broke with this assumption of equality when it was formally publicised in 2005. It represented a paradigm shift in the German university system by introducing a new element of competition between institutions that did not exist before. In contrast to 'quality', the term 'excellence' was deliberately chosen to signal the aim of creating a few outstanding units.

The aim of the Excellence Initiative is to strengthen cutting-edge research in Germany and to improve its international competitiveness. In its first phase (2006 to 2012) €1.9 billion were made available jointly by the federal and the state governments. In a second phase, €2.7 billion are provided for a period from 2012 to

2017. Funding was provided on a competitive base with an international review process. The projects were selected by a committee made up of the German Science Foundation, the German Council of Science and Humanities, and the Federal and State Ministers of Science and Research. The main rationale for decisions was scientific excellence which was documented by the fact that scientific members had a majority over political members in the committee⁴.

The excellence initiative comprises three lines of funding: *Graduate Schools* to promote young scientists (15% of the funding in the second phase), *Clusters of Excellence* to promote cutting-edge research (57%), *Institutional Strategies* in which universities had to present a strategic concept to advance their development as a whole (29%), informally also called *elite universities*. While the first funding lines have some similarity with the Research Training Groups and the Collaborative Research Centres of DFG, the funding of institutional strategies is unique to the German university system⁵.

Institutional strategies of six universities are funded during the first and second phase of the Excellence Initiative from 2006 to 2017 (LMU Munich, TU Munich, RWTH Aachen, Heidelberg University, FU Berlin, and Konstanz University), while three universities were only funded in the first phase (Goettingen University, Freiburg University, and Karlsruhe Institute of Technology) and the institutional strategies of five universities are only funded since 2012 (HU Berlin, Cologne University, Tuebingen University, TU Dresden, Bremen University)⁵.

The regional distribution of universities with funding for their institutional strategies shows that the funding decisions were not based on an equal distribution among the federal states. The fourteen universities that have been funded in either the first or the second phase are located in seven out of sixteen federal states. Five universities are located in Baden-Wuerttemberg, two universities each in Bavaria, North Rhine-Westphalia, and Berlin, and one each in Bremen, Saxony, and Lower Saxony. The concentration of funding from the other two lines is similar⁵.

The Excellence Initiative is expected to have a positive impact on the development of research at German universities in several ways⁶. *First*, differentiation of universities is strengthened. Excellent research clusters at universities are able to increase their international competitiveness and become more visible. *Second*, the increased

¹ Schiller, D. (2011), pp. 109-121.

² Liefner, I., L. Schätzl and T. Schröder (2004), pp. 23-38.

³ DFG (2013a).

⁴ DFG (2013a): AND Schiller, D. (2011), pp. 109-121.

⁵ DFG (2013a).

⁶ Schiller, D. (2011), pp. 109-121.

visibility and the better conditions for carrying out research within programmes funded by the Excellence Initiative have positive effects on the possibility to attract scientists from abroad. *Third*, the need to form clusters of researchers from several disciplines and to develop university-wide strategies improves the cooperation across disciplinary borders. *Fourth*, a successful proposal for funding of an institutional strategy might induce additional funding from other sources. *Fifth*, regional innovation systems are strengthened by the inclusion of other local partners, e.g. public research institutes and private firms, in the clusters of excellence. *Sixth*, even at universities which did not succeed in receiving funding, the Excellence Initiative initiated a process of differentiation which might strengthen these universities in the long-run. Some federal states have provided additional funding for those concepts that were not successful in the Excellence Initiative, but still very promising. Therefore, it is most likely that the introduction of competition-based elements in the German university system will have a positive effect in the long run.

However, the Excellence Initiative was also criticised¹. Frequently mentioned arguments were related to the limited period of funding and the problems connected with sustaining the programmes by the universities themselves later on, negative effects of large collaborative projects on niches and, in particular, social sciences and humanities, and the negligence of teaching.

Conclusion

The public research system in Germany consists of full universities, universities of applied sciences and public research institutes which are separated from universities. All universities have the mission to carry out research and teaching. At full universities, research is as important as teaching. At universities of applied sciences, the focus is on teaching and to a lesser degree on applied research. In comparison to public research institutes, research at universities was negatively affected by chronic underfunding and relies mainly on external research grant, e.g. from the DFG. While public research Institutes benefitted from increased funding from the federal government, universities suffered from stagnant funding from the federal states.

While all of the approx. 100 full universities formally have the same status, their spectrum, intensity, and quality of research differs strongly. In the past, the university system lacked differentiation and competition. However, in recent years, new competitive elements were introduced by the

Excellence Initiative. This resulted in a stronger and more visible differentiation of research at public universities. University management also needs reform and the first steps have been taken recently. In the past, the system was characterised by a lack of performance-based incentives and professional management. Research funding based on competition has been an efficient tool to induce reform. However, there is still a need to increase the funding available for the university system as a whole in order to ensure a sufficiently high quality of research at German universities.

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¹ Schiller, D. (2011), pp. 109-121.

Implementation of the Bologna Process in Finland and its Impact on Curricula Planning and Quality Assurance



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Abstract

This paper presents an overview of the system of higher education in Finland, discusses some important issues related to the implementation of the Bologna Process in Finnish universities, and explores various tools used for quality assurance in curricula planning and development. As Finland traditionally enjoys top positions in various international rankings on education, the experience of this country should be given significant attention when planning and implementing reforms in countries that are still under the process of harmonizing their systems of education with European and international standards.

Key words: higher education, curriculum development, quality assurance, Bologna Process

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Introduction. The Bologna Process for the European Higher Education Area (EHEA) is a political initiative within and beyond Europe to increase the compatibility of tertiary education, whose main action points include implementing the three-cycle system, enhancing mobility and recognition, promoting quality assurance, and increasing employability as well as strengthening the social dimension and enabling lifelong learning. Since its initialization in 1998, a total of 46 countries have joined the Bologna Process backed and enhanced by the European Union and its education policy as part of the Lisbon Strategy.

Inevitably, over the period of implementation both the Bologna Process itself and the concepts behind the EHEA have drawn as many supporters and enthusiasts as opponents and critics. Among the latter there have been some especially harsh in their accusations, who have claimed that «the Bologna Process under the guise of fancy words and elaborate phrases, is in reality a crude cost-cutting exercise that will lead to the ‘harmonization’ of Europe-wide higher education on a McDonaldization basis², to the destruction of individual university autonomy in the name of and while pursuing the Holy Grail of ‘standardization’ and ‘audit’/‘verification’³, to the creation of a ‘stifling top-down bureaucratic moribund EHEA»⁴.

² Ritzer, G. (2008) *The McDonaldization of society* 5. Pine Forge Press.

³ Power, M. (1997) Expertise and the construction of relevance: accountants and environmental audit. *Accounting, Organizations and Society* 22.2 (1997), pp. 123-146.

⁴ Palfreyman, David. «The legal impact of Bologna implementation: exploring criticisms and critiques of the Bologna Process.» *Education and the Law* 20.3 (2008), pp. 249-257.

However and, notably, the Nordic countries, which are traditionally considered to be especially strong in educational matters, used the Bologna Process to introduce some structural changes to their degree systems and to address some internal flaws, such as the length of study times, and have been much more tolerant in discussing the negative impacts on the quality of higher education¹.

The Bologna Process, which started in Finland in 2001 and was fully implemented by 2005, brought a number of structural changes to the organization of higher education with the reform of degree structures and, in the main, affected the number of teaching hours corresponding to one ECTS credit. The changeover to the new system was organized in accordance with quite an efficient model where special coordination projects were created in order to facilitate and harmonize the transition period across all universities in Finland.

The reform of degree structures also led to the revision of curricula in accordance with new standards and quality assurance policies. As Finnish universities enjoy a great deal of academic freedom in designing their curricula and organizing the teaching process, the changes made to curricula involved the contributions by university teaching staff and in most cases were agreed upon and approved at the departmental level. The quality assurance mechanisms, which include external and internal audits, various assessments, student evaluations and surveys are widely applied at Finnish universities and make sure the changes made to curricula are beneficial both for students and quality of degrees awarded.

Overview of Higher Education in Finland

The Finnish education system consists of pre-school education, basic education, general and vocational upper secondary education, and higher education. All education from pre-school to higher education is free. Education is compulsory for children reaching seven years of age and lasts for nine years. There is one optional year for those wishing to improve their grades. After compulsory education there is a choice between general upper secondary education aimed at providing students with competences needed to continue on to higher education and vocational upper secondary education leading to a vocational qualification.

¹ Välimaa, J., Hoffman, D. and Huusko, M. (2006). Bologna Process in Finland: Perspectives from the Basic Units. In Tomusk, V. (Ed.) *Creating the European Area of Higher Education: Voices from the Periphery*. Dordrecht, Springer, pp. 43-67. AND Saarinen, T. (2005) 'Quality' in the Bologna Process: from 'competitive edge' to quality assurance techniques. *European journal of education* 40.2, pp. 189-204.

The Finnish higher education system was quite recently reformed: before 2010 there were 21 research universities and 28 universities of applied sciences (UAS). UAS were previously known as polytechnics but their structure was reformed in the period from 1991 to 2000. By the beginning of 2010 a number of mergers between universities had taken place and in accordance with the new Universities Act all Finnish higher education institutions (HEIs) were given independent legal status either as public corporations (14 universities) or as foundations under private law (two universities)². As a result of mergers, Finland has three new universities: Aalto University, University of Eastern Finland and (the new) University of Turku.

As stated in the Universities Act of Finland, research is one of the three main functions of universities together with education and societal impact. Finnish universities are responsible for a significant proportion of all research conducted in Finland. The education offered at UAS is, on the other hand, based on the requirements of working life with the aim of preparing graduates for professional expert assignments. It is worth mentioning that the number of applicants to universities and UAS is pretty equal.

In Finland, schooling, including tertiary education, is free for all Finnish and EU nationals. The State remains the main funder of universities in Finland but, under the new legislation, universities gain greater autonomy in terms of finances and overall management. The governance and decision making processes is also reformed, with more 'external members' on the board, including the chair. In addition, the rector is no longer elected by and from inside the university community, but recruited by the board. Universities have also taken the place of the State as official 'employers', and university staff no longer have the status of civil servants.

According a report released by OECD in 2013, Finland enjoys one of the highest levels of educational attainment among all OECD countries: as shown in Table 1, 39% hold a tertiary degree (against the OECD average of 32%).

In comparison with other OECD countries, Finland spends a larger amount of public resources on tertiary education: see Table 1. The private share of total expenditure on tertiary institutions, as paid by individuals, businesses and other private sources, including subsidized private payments, is comparatively low: 4.1% compared with the OECD average of 32%.

² Universities Act. Finland (2009) Retrieved from: — <http://www.finlex.fi/en/laki/kaannokset/2009/en20090558.pdf>

Table 1

COMPARISON OF SELECTED INDICATORS OF FINLAND TO OECD AND EU21

Indicator	Finland		OECD average		EU21 average		Finland rank among OECD countries and G20 countries
	2011	2000	2011	2000	2011	2000	
Entry rates into tertiary education (university programmes)	65%	71%	60%	48%	59%	46%	13 of 36
Graduation rates in tertiary education	47%	40%	39%	28%	41%	27%	5 of 26
Annual expenditure per student, USD, in 2010	16714 USD		13528 USD		12856 USD		8 of 33
Total expenditure on educational institutions as a share of GDP	6.5%	5.6%	6.3%	5.4%	5.9%	5.2%	11 of 33

Source: compiled by author on the basis (Education at a glance: Finland (2013)).

The same report states that despite registering the eighth largest drop in GDP among OECD countries between 2008 and 2010, the country is maintaining its efforts to provide sufficient funds for education. In fact, Finland increased spending on education in absolute terms at all levels by 6% between 2008 and 2010. Likewise, in 2011 levels of expenditure in education relative to GDP (6.5%) were above the OECD average (6.3%), reflecting a real effort by the government to maintain provision for its educational system and continue investing in education despite the global recession.

The Bologna Process and curriculum reform in Finland

As part of the European-wide Bologna Process, Finnish University degrees were reformed in the autumn of 2005¹. In addition to improving the general quality and international comparability of qualifications, another important aim in Finland was to shorten study times. The main purpose of the Bologna reform was not structural but consisted mainly in renewing degrees so that they could better meet the demands of research and working life. The process began in Finland in 2002 when the Ministry of Education published a memorandum discussing the implementation of the two-cycle degree structure.

To coordinate the Bologna reform, in 2003 the Ministry of Education established a total of 22 field-specific national university projects

and named a coordinator for each project. The Ministry of Education also financed the projects. The project groups consisted of members from several universities together with student representatives. By giving the responsibility for the practical reforms to the universities themselves, the Ministry of Education could focus on updating the legislation.

Basically, reform consisted of introducing the two-cycle degree structure and the ECTS system. The first cycle university degree was already in use prior to August 2005, but in practice it played a minor role. Since August 2005, the Bachelor's Degree has become an obligatory requirement for proceeding to the Master's level. Previously, study attainments were measured in study weeks, which corresponded to 40 hours of study time whereas current ECTS credit corresponds to 26 hours of study time. As the previous Finnish system was fairly similar to ECTS, the change was not as dramatic as in some other countries. Moreover, ECTS credits had been used in student exchanges since the 1980s.

As already mentioned above, one of the purposes of degree reform was to renew the content of degrees. In Finland, as the division into first and second cycle degrees was already present – although not actively employed – and the change from study weeks to study points was a mechanical one, the emphasis was put on changing the curricula to more student-centered ones. Instead of focusing on the courses required for completing a degree, the emphasis was to be on the skills and competences students should gain during their studies. The internal aspects of the process were the analysis of core content and

¹ Reform of university degrees (2005) Retrieved from: www.minedu.fi/export/sites/default/OPM/Koulutus/artikkelit/yliopistojen_tutkinnonuudistus/liitteet/tutkinnonuudistus_en.pdf

student workload. To define the core content of the curriculum, a Core Content Divider method was widely used in Finnish higher education institutions¹.

This tool gives heuristic help for classifying curriculum contents in relation to three categories: essential knowledge, supplementary knowledge and specialized knowledge. Essential knowledge is knowledge that all students must possess and which is a necessity for further studies. Supplementary knowledge is, in turn, something that students should know, but it is not compulsory. Specialized knowledge includes specific details which are good to know but not necessary for proceeding with studies. This division into the three types of knowledge was taken into account when determining student workload and the number of hours needed for completing each course.

In addition to analyzing the core content of the curriculum and reforming the curriculum structure, other changes also took place on August 1, 2005. Personal Study Plans, the purpose of which is to ease student counselling and study progress, became obligatory for all new students. In addition, the grading system changed from the previously used 1–3 to the current 1–5 scale. In many universities, the academic year is now divided into four periods instead of the former model of an autumn and a spring term.

Bologna Reform in Humanities

The fact that the previous specific decrees on degrees in each field of study have been replaced in the Bologna Process by one common decree that now included university degrees in every field triggered a significant change in the Finnish higher education system. The new Government Decree on University Degrees applies to students of the Humanities, the Natural Sciences, Medicine, the Technical Sciences as well as those in art academies². As the practices in a certain field of study must be similar throughout the country, it was necessary to agree at national level on several matters related to the degrees in each field. For this purpose, the Ministry of Education created several national field-of-study-specific coordination projects. Some of the projects were very wide-ranging, for example, in the Humanities

and Natural Sciences, and others were narrower, such as in Social Work and Pharmacology. The Ministry of Education also allocated appropriate funding for the projects.

The coordinators had freedom and independence in organizing their own projects. The task forces formed for the projects were thus assembled according to very different principles: they were of different size, and the operating models of the projects differed from each other. Even the objectives set by the groups themselves could be different, with the exception that they must attend to the basic structure of the degrees.

The situation in Finland was different from that in many other European countries, since it was already familiar with the two-cycle structure and ECTS credits. In fact, Finland adopted the two-cycle structure on August 1, 2005, exactly 50 years after the first two-tier system took effect in 1955. Since then, Finland had mainly applied a one-tier model the aim of which was to pursue the Master's degree directly, and a voluntary two-cycle structure. Finland had also used the Finnish credit unit (an input of 40 hours of work per credit by the student) for over 25 years. Since it was considered impossible to make general recommendations without being familiar with the everyday work of the universities, the task force of the Humanities was formed of members with expertise which was as varied as possible. There are eight Faculties of Humanities in Finland, and the Faculty of Arts and Design in the University of Lapland also partly belongs to the same field of study. The members of the task force represented not only one university each, but also different disciplines and different post categories. There were two student members in the group from the National Union of Students in Finland, since it was considered important that the students' point of view be widely heard. The group was small enough to function well as a team but large enough to guarantee communication and feedback from different stakeholders in the Humanities. Depending on the subject, the group invited additional experts to their meetings.

As the Humanities is a very broad and multiform field of study, the task force had not itself tried, for example, to perform a core content analysis for each subject. However, the principles and practices to be used in such an analysis had been discussed in the group. The planning of content had been and still is carried out in the faculties, departments and branch-of-science-specific national networks, whose work had been supported by the task force with its recommendations on the general degree structure and the ways to pursue the degrees. Structural similarity does not require similarity of content, and

¹ Karjalainen, A. (2007) Four perspectives for designing joint programmes in higher education. Developing Joint Programmes and Degrees in the Nordic and Baltic Countries, Tampere 12–13th December 2007. Retrieved from: www.uta.fi/~kk55966/Karjalainen_1312.pps. AND Karjalainen, A., Alha, K., Jutila, S. (2006) Give Me Time to Think: Determining Student Workload in Higher Education. Retrieved from: www.oulu.fi/w5w/tyoka-lut/GET2.pdf.

² Government Decree on University Degrees. Finland (2004) Retrieved from: <http://www.finlex.fi/en/laki/kaanomokset/2004>.

thus, the task force has encouraged the disciplines to profile themselves, especially concerning the contents of the Master's degree. The core content of the Bachelor's degree had to be rather similar in the studies of the same discipline.

The project group for the Humanities also cooperated with project groups in other fields of study. It had been of great importance to ensure common principles with the most important *interdisciplinary partners*. That is, in those fields where studies are often combined in the same degree. Usually, humanities subjects are combined with subjects in the social sciences or education (in Finland subject teachers pursue their Master's degree in the so-called subject faculties, such as the Faculty of Humanities or the Faculty of Science, but carry out their one-year pedagogical studies in the Faculty of Education). The results of the cooperation with the social science and education project groups could benefit many future generations of students.

Cooperation with the deans of the Faculties of Humanities and with the administration of student services had also been important. The work of the group had also had an international dimension via the Finnish participation in the Tuning Educational Structures in Europe Project¹ as well as joint projects and cooperation with the Faculty of Humanities at the University of Tartu.

Curriculum development in Finnish HEIs

Curriculum development is undoubtedly one of the most central aspects of quality assurance in higher education institutions. One of the most important concepts in curriculum planning is learning outcomes, which have been defined as «statements of what a learner is expected to know, understand and/or be able to do at the end of a period of learning»². Learning outcomes, as a benchmark for assuring quality and efficiency in higher education, enable universities to express student achievement beyond the boundaries of subject knowledge and to foster other important skills that are developed during the educational process. Theory review goes back to the fundamentals of outcomes-based curricula by Benjamin Bloom³, with coverage of more recent contributions⁴.

¹ <http://www.unideusto.org/tuningeu>.

² A Framework for Qualifications of the European Higher Education Area (2005) Retrieved from: www.bologna-bergen2005.no/Docs.

³ Bloom, B. (1956) *A Taxonomy of Cognitive Objectives*. New York: McKay.

⁴ Coates, M (2000) *Compliance or Creativity?: Using Learning Outcomes to enhance learner autonomy*. Academic Development – Challenges and Changes International Conference, South Africa: Rhodes University, December. and Anderson, L. W. and Krathwohl, D. R. (eds.) (2001) *A Taxonomy for Learning, Teaching and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. New York: Longman.

In the report of the committee for the development of university degree structure with Ministry of Education of Finland, a university curriculum is defined as *a tool for planning teaching and studies*. The report lists some important qualities of the curriculum: with the help of the curriculum studies can be structured into a solid entity. The curriculum lists the courses and study modules together with their learning objectives and expected outcomes. The extent of studies and their core contents are also defined. The connections and the succession of courses are built according to the principles of cumulative learning. The curriculum describes the teaching and evaluation methods. It also describes the student's study path and enables unrestrained advancement of studies. A well-structured curriculum makes it possible to anticipate hindrances in study progress and helps in preparing a personal study plan⁵.

Moreover, the state supports harmonious curriculum reform by setting a National Framework of Curriculum Standards and ensuring continuous revision of a curriculum with inputs from all stakeholders.

To help the reform of the degree structure, the Ministry of Education financed a three-year (2004-2006) project called W5W – «Five Years, two degrees». The project was coordinated by the University of Oulu and the University of Kuopio, and a total of 12 Finnish universities participated. The W5W project had four sub-themes: the development of the academic curriculum, implementing personal study plans, developing more versatile methods for study counselling, and supporting the formation of guidance practices for supplementary studies during the transition period from the old degree structure. During the project, materials were published both in Finnish and English. A continuation project called W5W2 (2007-2009), coordinated by the same universities, supported the implementation of the Bologna Process in Finnish universities⁶.

Applying the concept of learning outcomes as central to the review of curriculum has helped most Finnish HEIs make changes to the content of the courses without compromising their quality. Moreover, Finnish education policies intended to raise student achievement have strong emphasis on teaching and learning, intelligent accountability, creating optimal learning environments and implementing educational content that best helps their students reach the broader and more specific aims of earning a degree.

⁵ Quality Handbook of Higher education in Finland and Russia (2009) University of Turku.

⁶ W5W Project website. www.w5w.fi

It is important to understand that Finnish universities enjoy extensive autonomy in curriculum development¹. Individual universities are free to develop curricula on the basis of the national degree structure in compliance with the Decree on University Degrees. Inevitably it leads to considerable differences between curricula in the same field in different universities, which may result in additional work when switching from one university to another. The Bologna Process urged Finnish universities to reconsider this approach.

Depending on the administrative practices at different universities, curricula are revised at varying intervals, and their revision is organized in diverse ways. There are two separate cycles in the curriculum development process: an annual cycle and a longer one. The annual preparation is based on updating the curriculum from the previous year and in practice no structural changes can be made. Structural changes are made when scientific or societal needs require them. For example, in Finland the reform of the degree structure in 2005 was such a reason.

Most often the curriculum is revised annually and the schedule is, to a large extent, dependent on the publishing date of the study guide that lists the descriptions of all courses offered by a particular HEI. Curricula are often planned and confirmed in different bodies; the preparation work may be done informally, but the decision is taken in an official body. In an ideal situation, the curriculum development process is a genuine joint undertaking between students, teachers, administrative personnel and interest groups outside the university.

When considering the curriculum development process from the perspective of quality assurance, it is essential to find out who takes part in preparing the curriculum, what is their status in the unit's organization and in the field of science. In most units, the annual preparation involves staff meetings, the purpose of which is to reach the whole staff of the department. In practice, the possibility to influence decisions in these kinds of meetings depends on the individual's academic status. Thus, larger meetings are best suited for polishing plans, not making them. The actual preparation process usually takes place either informally or as individual work. Thus, when building the internal quality assurance systems, universities should make sure that curriculum revision processes are clear and transparent to both staff and students.

Curriculum information may have several users if care has been taken that the information is easily available. Users may include those involved in curriculum design, teaching staff, current and prospective students, administration, researchers, the public, and those involved in external quality assurance. And so it is important to pay attention to how the curriculum is communicated. Most study guides, which are typical sources of curriculum information, contain a lot of information on teaching and studying in addition to the actual curriculum. In fact, they could be described as quality manuals of teaching activities. On the other hand, study guides can take different forms. For example, departments may publish their own more detailed leaflets in addition to the study guide at faculty or institutional level.

In most cases, slight alterations can be made to the written curriculum without having to go through the entire curriculum approval process. For example, course literature or teaching methods can be changed either at the decision of the individual teacher or head of department. There have usually not been written regulations on these changes, but deviating from the written curriculum is a rather vague area where practices vary. To ensure the quality assurance of teaching, it would be important to define what kind of changes can be made to the curriculum, by whom and how the parties involved are informed of the changes. These kinds of rules have not necessarily been formulated, because in most units the current curriculum processes have evolved gradually, and there have not been any systematic approaches to developing curriculum planning. Some details of the preparation process have been developed and unnecessary elements have been deleted over the years. However, with the introduction of quality assurance systems and the overall description of different processes, these processes have also become more transparent.

Evaluation and quality assurance at the University of Turku, Finland

In accordance with the Universities Act of Finland², HEIs are responsible for the quality and continuous development of their education and other operations. Legislation also requires them to perform external evaluations of their operations and quality assurance systems on a regular basis and to publish the results of such evaluations. Institutions decide on their own quality assurance systems, and the

¹ Luoto, L. & Lappalainen, M. 2006. Opetussuunnitelmaprosessit yliopistoissa (2006) [Curriculum processes at universities. Abstract in English.] – Retrieved from: www.kka.fi/files/146/KKA_1006.pdf.

² Universities Act. Finland (2009) Retrieved from: <http://www.finlex.fi/en/laki/kaannokset/2009/en20090558.pdf>

comprehensiveness, functioning and effectiveness of the systems are evaluated in audits¹.

According to the University Strategy of the University of Turku², the second largest public University in Finland, the quality assurance covering all its activities is a part of its normal operation. A quality assurance policy is created for the University, and the University's leadership ensures that quality targets are set at different levels of the organization. The University monitors and analyses its activities by, for example, internal and external audits, and develops its activities to secure the implementation of the strategy.

The Rector is responsible for the organization of the Quality System at the University as a whole, and the Heads of Units are responsible for quality assurance within their respective unit. However, the quality of the University's activities is fundamentally the result of the expert, responsible and ethical work of the members of the University community.

The aim of quality assurance at the University of Turku is to:

- support and ensure the implementation of the objectives and vision defined in the University's strategy;
- manage the work on the basis of sufficiently exact and updated monitoring and evaluation information;
- develop the quality of the University's working processes and enable the academic staff to focus on their basic duties;
- make the central principles and high quality of the University's work visible.

At the Faculties of the University of Turku, quality assurance work is led by the Dean and in the Departments by the Head of Department. There are also Quality Contact Persons, as appointed by the Faculty, who are in charge of the practical implementation of quality assurance.

Assessments and peer review have a long tradition of being included in the work of the scientific community. Research, teaching and learning are assessed using many different criteria.

As stated in the University Strategy of the University of Turku, the expertise of its personnel is the key factor in the University's success. The personnel are encouraged to maintain and develop their own professional skills and to take initiatives to develop them. As stated in the University Strategy, development discussions are established

as part of the community's activities, and they are used to support the management of units and the work, development and career advancement of staff.

Employee development is an administrative personnel support service, which offers the staff of the university the possibility to develop professionally and supports the individuals at the university in work community related improvement. The goal of this operation is to develop the intellect, skills and attitude of personnel, so they can help the staff, so that it can keep up with the current times as well as developments in the changing future.

Needs regarding the methods and contents for the development of the university personnel are assessed, and the possibilities of the university personnel's development are diversified on the basis of assessments, taking into account, e.g. increasing internationalization. Employee development is split into two sections at the university: general employee development and educational development. Within the framework of personnel development activities, both university-level education and unit-specific development projects are organized.

The Special unit for Education Development organizes and coordinates the development of best practices in teaching. Its main role is seen as:

- to organize pedagogical training for university staff;
- to coordinate and train the university's network for study counseling;
- to act as an expert on issues related to education within the university's quality assurance work; and
- to offer pedagogical and technical support for projects within the virtual university and other uses of teaching technology, using the university's network for teaching development.

Development of teaching faculty's and other employees' competences is regarded as a central factor for the maintenance of well-being at work in the university. The university's Staff Administration prepares suggestions for training and development courses that the university offers each spring and autumn semester. The preparation is supported by the University's Committee for Employee development, which defines the annual staff competence needs, further staff development methods and discusses principles for employee development³.

By way of **conclusion**, it should be noted that the Bologna Process has probably been one of

¹ Talvinen, K. (2012) Enhancing Quality. Finnish Higher Education Evaluation Council.

² University of Turku. Strategy and Values. 2013. Retrieved from: http://www.utu.fi/en/university/strategy-and-values/Documents/UTU_strategy_2013-2016_final.pdf.

³ University of Turku Regulation on Education and Degrees (2012) Retrieved from: <http://www.utu.fi/en/research/utugs/Documents/RegulationStudies2012.pdf>

the most notable recent triggers of change in global education and some countries have been especially successful in using this challenge as an opportunity for positive transformations and growth. *The Finnish case can be seen as a good example of reforming the degree structure, implementing the new system and adjusting curricula to the new regulations without compromising their content and overall quality.* All this gives grounds to say that Finnish universities benefit both from the country's long-standing traditions in education and pan-European reforms, which ensure sustainable curricular changes and the high quality of awarded degrees.

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What Can be Learnt from United States Academia: the Case Study of the University of Wisconsin-Madison



Dmytro Khutkyy¹

Abstract

Ukrainian academia in its current state needs fundamental modernization. With the ongoing political reforms, there is a realistic chance to introduce the best education and research standards. A case study conducted through the method of participant observation in a United States university² illuminates academic principles and approaches, which are worth implementing in Ukraine. They cover the following domains: transparency, convenience for teachers and students, academic freedom and culture, legitimation of various forms of knowledge, teaching, study, and research patterns, and organization of department functioning. And these points can be introduced by internal decisions at university or departmental level.

Keywords: Academia, higher education, the United States of America, Ukraine.

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Introduction

Contemporary Ukrainian academia still bears a number of obsolete inefficient bureaucratic elements that prevent it from introducing cutting-edge innovations. Just to mention the legacy of institutional segregation of education from research that hinders bringing in the most updated scientific findings to teaching and restricts the recruitment of young scholars to research networks. There are definitely contextual problems like the stagnant Ukrainian economy that prevent massive investment in academic and commercial research. Nevertheless, there are institutional conditions which can be altered. The best example is the progressive higher education bill, which is currently under consideration in the Ukrainian Parliament. In the spirit of positive psychology, it is useful to concentrate not on criticism, but on suggestion, and not on problems beyond our control, but on issues, which can be deliberately changed.

According to U.S. News & World Report rankings in 2013, in the field of Sociology the University of Wisconsin-Madison was ranked #1 together with Princeton University and the University of California-Berkeley³. Therefore, it is an excellent model to learn from. The following analysis is mostly grounded on participant observation of everyday teaching, study and research patterns in the case of University of Wisconsin-Madison, in Wisconsin State, USA. The fieldwork was conducted in the period of September-December 2013 within the framework of my stay in the university as a visiting scholar, a Carnegie Research Fellow. The data is definitely qualitative and the conclusions are case-based, and cannot be generalized on the entire university or US academia. Rather, they can be viewed as examples of best practices, useful for Ukrainian academia.

³ Sociology. Ranked in 2013. (2014).

For a comprehensive overview, a number of institutional components have been observed: transparency, convenience for teachers and students, academic freedom, academic culture, knowledge legitimacy, teaching and study patterns, research patterns, and departmental functioning patterns. Some elements of the advanced approaches to university functioning have already been introduced in Ukrainian academia, for instance, at the National-University of Kyiv-Mohyla Academy. Thus, only the most contrasting and, therefore, potentially contributing patterns have been illuminated. What is important is that many of the approaches to education are informal and so not reflected in any official documents. Those who practice them perceive them as normal and seldom if ever reflect on them. They become visible when viewed by an external observer coming from a different academic culture and only then can be interpreted and analyzed from a sociological perspective. As far as the research is essentially qualitative, I follow the inductive approach inquiry; firstly interpreting data and only secondly searching for connections with the available theoretical developments.

Transparency

There is a normative discourse of transparency in public institutions and universities are definitely the brightest example of its implementation. What strikes one first visually is that the walls and doors of administrative offices are literally transparent — they are made of glass. Thus, the routine of administrative staff is made visible to any visitor. Office doors are left open almost all the time, especially — during meetings and consultations with students or colleagues.

Convenience for teachers and students

It is implied that appropriate conditions should be created for the sake of efficient study and research. Usefulness starts from such elementary things as class schedules that are available online. Downloadable materials available online are a regular practice. It corresponds with the general trend of intense use of online tools for learning — they might be as unconventional as Facebook group discussions¹. At the level of courses, an elective course is officially established even if it has half a dozen students. I attended such a class and must confess it was very productive. Even regular discussion groups for basic courses have about 12 students each. Graduate, undergraduate, and even high school students can attend the courses. I participated in one: everybody is subject to the same demands and without prior knowledge, and it is difficult to find out who is from which year of study. No wonder then, that professors have keys

from the building that houses their offices and can work inside anytime — even late at night or at weekends. Having access to facilities for work is crucial and it is provided.

Academic freedom

Innovations require large space for creativity and experimenting, and research and teaching are no exception. Therefore, at the University of Wisconsin-Madison, course authors have an exceptional right for independent establishment of teaching content and techniques, reflected in syllabi. As inscribed in university documents “courses are designed and conducted in diverse ways”². This also implies that no other professor or administrative staff checks or corrects syllabi, except in exceptional cases, unless there are some complaints from students. Lecturers can modify their syllabi during the semester. One professor asked students about their suggestions. I personally proposed to substitute one topic with another and the very next week there was a vote among course participants. And a simple majority of votes confirmed my proposal, which was implemented within one month of the start of the course. Teachers can flexibly change teaching formats (lecture / seminar / workshop) right within the class, depending on what they find better at the moment. In fact, so many elements of teaching are left for professors and teaching assistants to decide, that they are even not reflected in official documents³.

Academic culture

Some elements of academic culture might seem unusual for representatives of more conformist cultures, where many practices are standardized and inscribed in statutes. On the contrary, in the university that is the subject of this case study the teachers have the right to conduct classes outside university buildings — in a park, for instance, and office consultations — in a café, and it should even be reflected in a syllabus. According to university regulations, “faculty and instructors may require students to attend scheduled meetings of a class... faculty and instructors should inform students in writing at the beginning of each course if there are specific expectations for attendance/participation, including whether any component of the grade is based on such attendance/participation”⁴. Students are not allowed and are strongly prohibited from talking among themselves in the classroom and from using electronic devices for leisure. It is a principle of respect to the teacher, and it is more likely that students adhere in smaller groups and in graduate classes.

² Faculty Legislation. (2014).

³ Wisconsin Statutes. Chapter 36. University of Wisconsin System. (2014).

⁴ Faculty Legislation. (2014).

¹ Dougherty, K.D. & Andercheck, B. (2014), pp. 95-104.

Knowledge legitimacy

Social reality goes far beyond the academic sphere and other media provide society with information too. Thus, it is logical that in the university in question mass media journalist publications are utilized as legitimate sources of information during classes and even suggested in syllabi. For example, newspaper reports, movies, and TV shows can be utilized as pieces of evidence from an external setting¹. Moreover, Wikipedia and analogues like Participedia are also used as permitted sources of knowledge. In fact, according to one piece of research, Wikipedia is almost identical to Encyclopedia Britannica – both of them have a very close percentage of errors². Students are even encouraged to write and add entries to Wikipedia.

Teaching and study patterns

In the University of Wisconsin-Madison students are expected to read literature before lectures, not after. And this is reasonable, as they will remember more and are better prepared to absorb more complex and advanced knowledge. Sometimes students have out-class home assignments in the form of mini-research (observations, experiments, interviews, surveys), even before specialized methodology courses. Thus, they become familiar with empirical fieldwork as early as possible in their course of study. The importance of data gathering is emphasized for comprehension of substantive, qualitative³ as well as quantitative⁴ data, at all levels of the curriculum, including introductory and advanced courses⁵. They can be as interactive and extravagant as role-playing games as simulations of social phenomena⁶. On the other side, some scholars criticize particular fieldwork assignments. For instance, M. Braswell expresses caution that students sometimes do not care enough about breaching experiments' impact on participants⁷. In any case, it is not the sequence of knowledge to practice, but a combination of both, due to which students learn some practical issues and better connect abstract knowledge with their life experience. This conforms to the J. Preissle and K. Roulston perspective, as they advocate iterative approach to learning – essentially regular alterations of theory and fieldwork, which facilitate to reveal common problems and increase understanding of theories and methods⁸.

Research patterns

In American academia the fundamental social norm exists of linking teaching with research.

Indeed, as observed in the university that is the subject of the case study, graduate students are greatly encouraged to conduct empirical research, especially on data collected in person. Theorizing is possible too, but it is definitely a second choice. This approach is explicated in the conclusion that conduction of authentic research projects with all stages from research design through data collection to analysis and peer evaluation are essential for students to acquire comprehension⁹.

In addition, graduate students usually spend up to half of their time working in a research center or teaching as teaching assistants. Thus, they assist professors, gain additional experience, and can join and contribute to a bigger research project, become part of a research team, and establish professional contacts as early as in graduate school. The feedback from some students demonstrates that they appreciate these opportunities.

PhD candidates receive advice about their PhD theses from all members of a defense committee, and not during the defense, but in advance. Therefore, critique of a PhD thesis is not a surprise for a student and he or she has the chance to consider it beforehand and upgrade the paper accordingly. Defense of a PhD thesis is carried out in the department, not at an external institution, by about five professors. The Committee may have the following composition: three experts from the same department, one – from the same field but from another department, and a minimum of one person – from another university. The substantive side is definitely more important than the formal one. For instance, at one defense two of five commission members participated remotely – by video conference format.

Departmental functioning patterns

Professors from post-soviet academia might find administrative approaches in the USA strikingly different. For instance, at the University of Wisconsin-Madison teachers are not obliged to document their academic or private trips outside the town, especially if they do not have to move classes. By default, administrative documents are drawn up by administrative staff, not by professors. Lecturers are encouraged to devote over 40% of their working time to research and publishing articles and books. Teaching is supposed to take up 40% of working time, while participation in conferences, commissions, writing references and the rest – less than 20%. No doubt, such distribution of work time creates better preconditions for academic research.

Challenges

Despite the great number of advanced patterns in academic teaching, research, and administration, there are a number of questionable practices, which

¹ Massengill, R.P. (2011), pp. 371-381.

² Wright, E.O. (2011).

³ Healey-Etten, V. & Sharp, S. (2010), pp. 157-165.

⁴ Strangfeld, J.A. (2013), pp. 199-206.

⁵ Ibid. pp. 200-201.

⁶ Simpson, J.M. & Elias, V.L. (2011), pp. 42-56.

⁷ Braswell, M. (2014), pp. 161-167.

⁸ Preissle, J. & Roulston, K. (2009), p.16.

⁹ Ibid. p. 17.

deserve to be discussed and criticized. As far as it is an American university, much attention is devoted to American society itself. In this respect, the critical remark about teaching introductory sociology made almost thirty years ago is still up-to-date: “perhaps the most significant peculiarity of the course is... its striking lack of any sort of comparative or historical focus”¹. Moreover, it seems that American professors sometimes do not have enough time for research. Teaching, administrative, and other professional responsibilities leave less time than is desired for individual academic research. In addition, despite new innovative teaching strategies available often research instructors «the way they are taught»². Intercultural differences matter too. According to J. Preissle and K. Roulston the teaching of research to students of non-Western cultures faces three challenges: practical and ethical issues of entering a local community; use of data regarding confidentiality and benefit for respondents; conveying meaning in translation³. Finally, there is one characteristic of the American educational system, which is closely connected with the highly valued in the USA individualism⁴. This relates to the privacy of individual grades — for papers, courses, PhD theses. On the one hand, it saves the self-esteem of students as they are protected from comparison with the performance of others. But on the other hand, they lose one more precondition for motivation to realize how they perform with relation to others and to do better. In societies with more pronounced collectivist values, as in post-soviet Ukraine⁵, publicly announced grades are a norm, as is public defense of a PhD thesis. And this opens up possibilities not only for peer criticism, but also for peer support. The latter case is even more telling, as in Ukraine a person publicly defending a PhD might have a dozen close people in the room giving emotional support. This is a benefit of solidarity in a collectivist society. In any case we should treat these values from a cultural relativist perspective — interpreting these phenomena from the viewpoint of people in their respective cultures.

Conclusion

Each of the observed specificities might seem minor; however, all of them demonstrate similar patterns. They are related to convenience, quality, freedom, and responsibility in the academic domain. This is not an easy balance, but it can be reached. For instance, elected courses as part of the Liberal Arts approach were innovatively introduced at Kyiv-Mohyla Academy, and now they are more widespread in Ukrainian academia. The Bologna Process, officially supported by Ukrainian

governments, creates institutional opportunities for acceptance of these principles. Actually, these progressive changes become more probable, as more students and professors participate in study and research programs abroad. And each teacher and administrator can definitely introduce them within their own sphere of responsibility.

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¹ Sanderson, S.K. (1985), p. 397.

² Strayhorn, T.L. (2009), p. 120.

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⁵ Ibid.

International Benchmarking in Higher Education



Natalia Vasilkova¹

Abstract

This article is devoted to benchmarking as one of the research and management tools which is undertaken through planning and review processes at various higher education institutions worldwide and is aimed at enhancing their outcome. However, most Ukrainian universities still have to explore this instrument for themselves and incorporate it into their market research, strategic planning and performance evaluation processes.

Keywords: higher education, benchmarking, strategic management.

Introduction

In the last few decades and especially in recent years, there has been increasing interest in research and management tools aimed at assuring and enhancing the quality and outcome of higher education institutions at both national and international levels. One of them is benchmarking,

a well-known and a widely used instrument in the commercial sector, which is now becoming more popular in the university governance process.

The original development of benchmarking in the private sector in the 1980s-1990s was caused by: greater international competitiveness; increasing recognition of the need to ensure productivity and performance that compares with the best in the field; the rise of interest in enhancing quality; and the rapid growth of information technology, which has made data collection and management possible. In recent decades benchmarking has proved to be an effective method for improving the quality and processes in an organization on the basis of identifying best practices and permanent learning process. Now, according to the last global survey on management tools and trends conducted by Bain & Company, benchmarking is one of five management tools used worldwide most often (another four from these five tools are: Strategic Planning, Customer Relationship Management, Employee Engagement Surveys and Balanced Scorecards)².

Competition in the higher education market forces universities around the globe to continuously improve all of their activities. Top universities in the world associated with the highest quality of education and research and traditionally headed by international ratings have to not just maintain their achievement and performance but to work proactively so as to ensure their high competitive position. For top universities and those aspiring to become world leaders the focus on innovation in all areas that provide them with significant and unique competitive advantages is extremely important. For universities that are just trying to reach international level, it may be beneficial to use benchmarking, a tool that is increasingly being applied in the corporate sector, but is still underestimated in the field of education.

¹ PhD, Associate Professor at Kyiv National Economic University named after Vadym Hetman

² Rigby, D., Bilodeau, B. (2013). Management Tools & Trends 2013. Bain & Company: p. 8-9. — Retrieved from: <http://www.bain.com/publications/business-insights/management-tools-and-trends.aspx>.

Definition, objectives and benefits of benchmarking applied in higher education

There are a variety of definitions of benchmarking. Thus, benchmarking can be seen as «a tool to assist organizations identify processes they need to change to be able to achieve specific strategic goals and objectives»¹; benchmarking is an evidence-based process, including comparisons with other institutions in order to enhance good practice². Benchmarking helps one to understand how leading companies work, improve business processes within a company or organization relatively quickly and at a lower cost and achieve the same or even sometimes better results in one's own organization.

For the same reasons institutions in the public sector, including higher education, have in many countries adopted benchmarking as a useful management tool in the last decade. Benchmarking allows a higher education institution to identify and monitor standards and performance in order to improve a university's outcomes, processes and practices; to discover new ideas for attaining the university's strategic goals as they are outlined in its strategic plan; to provide an evidence-based framework for change and improvement; to inform planning and goal-setting; to improve decision-making through referencing of comparative data; to bring an external focus to internal activities³. So, benchmarking is an important tool of evaluating institutional performance based on comparative analysis of institutional and external information in order to identify efficiencies and cost reductions and to target these to best effect.

With the aim of improving the use of benchmarking in higher education, the European Commission funded a project in 2006-2010 called «Benchmarking in European Higher Education»⁴. The authors of that study defined the term «benchmarking» in relation to higher education as «the voluntary process of self-evaluation and self-improvement through the systematic and collaborative comparison of practice and performance with similar organizations. This process allows institutions to identify strengths and weaknesses, and to learn how to adapt and improve organizational

processes in order to face growing competition»⁵. It means that benchmarking can be seen as «the process of finding best practices and of learning from others»⁶.

In the United States benchmarking in higher education was first introduced by the National Association of Managers in Higher Education. In Australia, as in many other countries, the development of benchmarking has been associated with the movement to improve the quality and the need to demonstrate the quality and efficiency of university operations⁷. Benchmarking approaches have been developed nationally, internationally, or in most universities with the support of consulting firms. In European countries, national approaches to benchmarking in the higher education sector were developed in the mid-1990s at the initiative of the national authority or by one or a group of universities, or by an independent body.

At the same time, international benchmarking used so far is rather limited. The European Benchmarking Programme ESMU⁸ is an example of a transnational comparative analysis that goes far beyond the simple comparison of data, focusing on the efficiency of the overall university management processes. Cooperative program works with a small group of higher education institutions towards identifying best practices⁹.

Despite the variety of foreign studies on methodological approaches and technologies to improve university management, benchmarking has not yet become a common research and strategic management tool in Ukrainian higher education. But the importance of implementing this instrument in their practice is growing constantly, when we take into account increased global competition on the education market.

Benchmarking equally involves two processes — evaluation and comparison. Benchmarking has usually involved taking a best product and a best marketing process used by direct competitors

¹ Hacker, M. E. & Kleiner, B. M. (2000). 12 steps to better benchmarking. *Industrial Management*, 42(2), pp. 20-23.

² Learning and Teaching Unit. (2012). Benchmarking. Retrieved from: <http://www.unisa.edu.au/academicdevelopment/quality/benchmark.asp>.

³ Benchmarking at the University of Adelaide. — Retrieved from: <http://www.adelaide.edu.au/learning/staff/benchmarking/>.

⁴ <http://education-benchmarking.org>.

⁵ A Practical Guide: Benchmarking in European Higher Education. (2008). European Centre for Strategic Management of Universities (ESMU), p. 50. Retrieved from: http://llp.iugaza.edu.ps/Files_Uploads/634956737013680415.pdf.

⁶ Benchmarking to improve efficiency. (2010). Status Report, p. 7. — Retrieved from: https://www.hesa.ac.uk/dox/Benchmarking_to_improve_efficiency_Nov2010.pdf.

⁷ Stella, A., Woodhouse, D. (2007). Benchmarking in Australian higher education: A thematic analysis of AUQA audit reports. Australian Universities Quality Agency. — Retrieved from: http://pandora.nla.gov.au/pan/127066/20110826-0004/www.auqa.edu.au/files/publications/benchmarking_final_text_website.pdf.

⁸ www.esmu.be.

⁹ A Practical Guide: Benchmarking in European Higher Education. (2008). European Centre for Strategic Management of Universities (ESMU), pp. 43-44. Retrieved from: http://llp.iugaza.edu.ps/Files_Uploads/634956737013680415.pdf.

and/or organizations working in similar areas. The aim of benchmarking is to identify possible ways to improve the organization and its business process, products and practices. Benchmarking can be considered as a type of strategically-focused market research and as an alternative method of strategic planning and strategic analysis based not on achievements but on the performance and best practices of competitors. So, we can conclude that benchmarking combines these three components into a single system: strategy development, industry analysis and competitor analysis.

Types and process of benchmarking in universities

Classification by UNESCO-CEPES (2007) based on existing literature distinguish six types of benchmarking in the higher education sector¹:

- internal benchmarking (comparing similar programmes in different components of one higher education institution);
- external competitive benchmarking (comparing performance in key areas based on institutions viewed as competitors);
- functional benchmarking (comparing single processes);
- trans-institutional benchmarking (across multiple institutions);
- implicit benchmarking (quasi-benchmarking looking at the production and publication of data/performance indicators which can be useful for meaningful cross-institutional comparative analysis; these are not voluntary but result from market pressures or coordinating agencies);
- generic benchmarking (looking at basic practice process or service) and process-based benchmarking (looking at processes by which results are achieved).

The choice of particular type of benchmarking is defined by the objectives of a university, its needs and requirements of an environment, available resources and potential for development, as well as by a possibility to implement this tool in a strategic management mechanism so as to ensure its competitiveness.

According to the results of different studies, the use of benchmarking in a strategy planning system allows universities to continuously identify those particular qualities of the university, which are a source of key benefits, and those that need to be effectively changed. Thus, the tool shows the direction for development, improvement and correction of the main features and principles of the university in order to enhance its competitiveness.

¹ A Practical Guide: Benchmarking in European Higher Education. (2008). European Centre for Strategic Management of Universities (ESMU), p. 40. Retrieved from: http://lllp.iugaza.edu.ps/Files_Uploads/634956737013680415.pdf.

The application of benchmarking can provide the following benefits to universities²:

1. The ability to objectively analyze their strengths and weaknesses compared with others which are better.
2. Targeted studies and analyses of leading universities allow an institution determining strategic objectives for its own development to achieve leadership.
3. Generation of new ideas on learning as well as on marketing of education services.
4. Regular benchmarking helps track actions of competitors and act in a proactive manner.
5. Benchmarking complements the traditional approach to strategic planning «from achieved performances» and enables planning by analyzing competitors.

It is obvious that non-profit public institutions such as universities cannot use income or similar widely used in business key performance indicators (KPI) for determining their success. Other indicators can be used in higher education, such as: the percentage of students who did not complete the study; percentage of students who complete the training in time; student satisfaction; graduates satisfaction; employer satisfaction and others.

Performance in research and innovation can be defined based on: the number of publications; citation; number of patents; number of contracts, income etc. Similar lists of indicators could be developed for other areas of a university's activities. However, the data is often limited to the small amount of information that is broadly available, which greatly complicates an in-depth benchmarking analysis.

Regardless of whether national benchmarking of the higher education sector has been carried out, or benchmarking for individual schools has been conducted (within one or between several universities), benchmarking should always be used to identify the strengths and weaknesses of the institution and to define a set of targets and indicators for improvement. Successful benchmarking is based on a strong desire on the part of institutions to increase their organizational performance to become «a learning organization», which considers the processes in real time, looks for new practices and adopts new models of operations. Regardless of whether benchmarking is conducted at a university's structural unit level (faculty, department, institution etc.), or at

² Semenjuk, S. (2012). Rozvytok innovatsiynoho marketynhu na rynku osvitykh posluh. *Halyts'kyj ekonomichnyy visnyk*, 6(39), pp. 151-158. (Семенюк С. Розвиток інноваційного маркетингу на ринку освітніх послуг. // Галицький економічний вісник. — 2012. — №6(39). — с. 151-158.

the level of the whole institution, it can lead to significant results only when it used in a context of transformation and development.

Benchmarking requires a focus on change, investment in financial and human resources, involvement of top managers and associated staff in this process to produce and to implement powerful results. It is most valuable when it used on a regular, long-term basis and included in the university's strategy development process. It requires a clear and professional approach at all stages — from the development of an algorithm of analysis to clear identification of the processes of data collection and implementation of results. The main areas of benchmarking in higher education institutions are: strategic management and administration; services for students (career centers, campus services, accommodation, meals, conferences, etc.); research; teaching; property; finance; management; library and IT.

Benchmarking is one of the stages of strategic planning at foreign universities. It is worth mentioning the recommended process of benchmarking at the university, made on the basis of the two-year study within the auspices of the project «Benchmarking in European Higher Education», as funded by the European Commission (Fig. 1).

Evaluating the effectiveness of the university as a carrier and a provider of educational services is the basis for management decisions about the appropriateness and nature of the changes in the functioning and implementation of the educational process. Such an assessment should determine the key success factors and prospects of development of educational organizations, and identify and diagnose its problem areas, which should help specify a plan of strategic changes to improve competitiveness.

Identifying the problem areas allows weaknesses in the implementation of business processes to be determined. It is advisable to divide the weaknesses of a higher education institution into three groups:

- 1) weaknesses in the order of process fulfillment;
- 2) weaknesses related to lack of information and technical support processes;
- 3) weaknesses caused by organizational structure and staff of higher education institutions.

The identification of weaknesses is the basis for the search and analysis of possible ways of optimization. Such main ways are: to take operational measures to partially neutralize weaknesses, and develop a comprehensive program aimed at restructuring weaknesses.

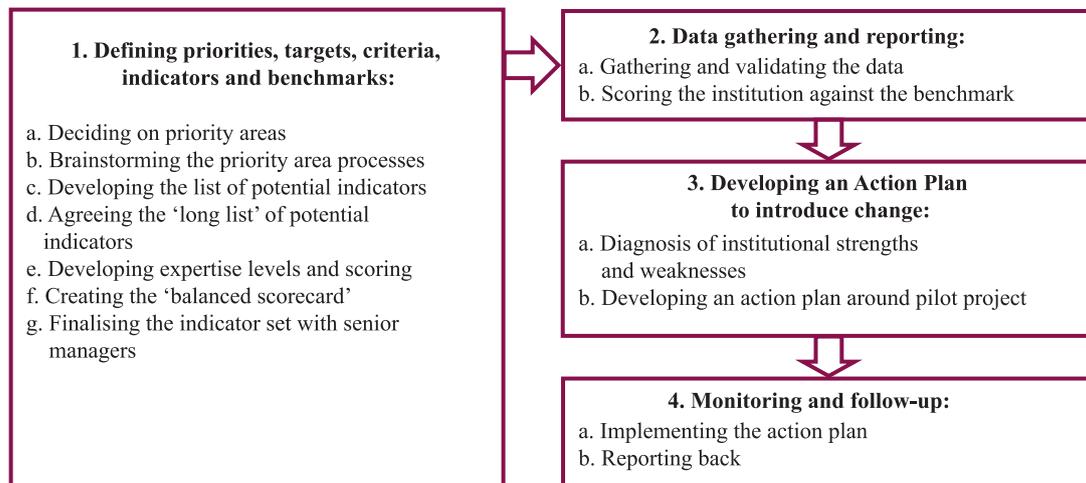


Figure 1. Stages and steps of a typical benchmarking process at a higher education institution

Source: compiled by author on the basis ⁽¹⁾

¹ A University Benchmarking Handbook: Benchmarking in European Higher Education. (2010). European Centre for Strategic Management of Universities (ESMU). — Retrieved from: https://www.che-consult.de/downloads/Handbook_Benchmarking_EBI_II.pdf.

In both cases, a university can work using innovative models and using the reference mechanism for improvement, accumulating the theoretical or practical experience of others.

Benchmarking focuses the whole strategic management system of the university on continuous improvement of its activities through improvement over current performance, mastery of best practices and achieving a leadership position in a particular field of operation. Improvement in application of this technology for the development and implementation of organizational competitiveness strategy facilitated entry of proprietary software products and technology for promoting and monitoring the implementation of this management tool.

Conclusion

Using the concepts of benchmarking in the management of competitiveness of university enables implementation of the best experience of operations, to improve quality and efficiency of educational services, to form a new notion of the educational process, to assess the professionalism of management, which ultimately leads to sustainable development of the institution and achieve the desired level of competitiveness. The impact of benchmarking depends on the proper selection of the improvements object, on determining a benchmark-organization and the usefulness of its experience for the university, on development of an implementation and maintenance system for such experience at one's own institution in conjunction with its strategic management system. Ukrainian universities seeking to improve their international position should use this tool more actively in the process of their strategic market research and strategic planning.

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Sustainable Development and Universities: Theory and Practice



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Abstract

This article is dedicated to the analysis of the interconnection between higher education and sustainable development. Key roles performed by higher education institutions regarding sustainability issues are highlighted. Modern trends in education for sustainable development are singled out, and key features of different countries' approaches to the issue (and Ukraine in particular) are studied. New types of learning which emerge within education for sustainable development, together with key elements of sustainability competence, are outlined. Essential university functions and capabilities for inoculation and adoption of the principles of sustainable development in wider society are summed up.

Keywords: education for sustainable development, sustainable development, university, sustainability competence.

Introduction

Humankind has experienced ambivalent periods of slow, but sustainable development, and periods of revolutions and breakthrough, which usually have a dramatic impact on society. In today's increasingly competitive, interdependent and unpredictable world which nevertheless offers much more opportunities to an overwhelmingly greater number of people, practically everywhere on the planet, the notion regarding the necessity to change the very paradigm of social order has appeared and became perpetuated. The main reason for that is the understanding of the need to shift from the «brown» economy to the «green» one³ within the necessity to address global issues such as climate change, pollution, poverty, armed conflicts, etc. (Note 1). That is why the heads of states and governments and high-level representatives of the countries participating in the 2012 Rio+20 Summit, renewed their commitment to sustainable development (SD) and to ensuring the promotion of an economically, socially and

³ United Nations (2012a), From Rio to Rio: A 20-year Journey to Green the World's Economies, p. 13. Retrieved on 28th June, 2014 from: <http://www.thegef.org/>.

environmentally sustainable future for our planet and for present and future generations¹.

Note 1.

UN experts note that «40% of all food produced in the United States goes uneaten», and 25% of the food brought home is then thrown away by Americans¹. And each time food is wasted, all the resources used to produce it go to waste too and this happens in almost every country. In terms of non-food waste, an estimated 11.2 billion tonnes of solid waste are collected worldwide². This is probably why the analysis of Earth Ecological Footprint showed that by 2050 humanity will be using resources and producing waste at 2.6 times the rate at which they can be renewed or sequestered³. So by 2030 we will need one more Earth to cover consumption demands.

There are many **definitions** of SD. The most known and widely supported one is the 1987 definition presented in the United Nations World Commission on Environment and Development (WCED) in the report 'Our Common Future'. According to it, «sustainable development seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future»². Also, in the Commission's words: «.. sustainable development is .. a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with the future as well as present needs»³. Sustainable development is also defined as «maintaining a delicate balance between the human need to improve lifestyles and feeling of well-being on one hand, and preserving natural resources and ecosystems, on which we and future generations depend»⁴. According to the Centre for International Sustainable Development Law, SD is based on a long-term approach which takes into account the inextricable nature of the environmental, social and economic dimensions of

development activities. **Education for Sustainable Development (ESD)** is defined with regard to that as the knowledge, skills, understanding and values to participate in decisions about the way we do things individually and collectively, both locally and globally, that will improve the quality of life without damaging the planet of the future⁵. Now, during the last year of the Decade for Education for Sustainable Development (DESD, 2005-2014) declared by the UN in 2002, it is quite pertinent to review the role of universities for SD.

Throughout history, universities as core societal institutions engaged in educating and developing future inventors and academics, decision-makers, the leaders of countries, entrepreneurs and citizens of the nation, region and the world, play a crucial role in transforming societies and forming the current condition the world finds itself in. The need to shift to SD in a sense that it is committed to hindering and redressing environmental-ecological degradation within an integrated value framework of generational and global equity⁶ affects all participants of global society one way or another. The role of education in fostering SD was firstly mentioned in chapter 36 of the Agenda 21⁷. And the systems of higher education of countries represented by the higher education institutions (HEI) are undergoing a lot of changes at present. Namely, HEIs face the challenging trends of globalization of higher education, growing competition, spreading of mass education (due to ICT developments, online learning and MOOCs) etc. The need to go with the times by introducing ESD into their practices appeared to be one more challenge for universities around the world. ESD-related educations include: environmental, peace, human rights, consumer, development, health, HIV/AIDS, biodiversity, gender, inclusive, multi-cultural, holistic, global, citizenship, disaster risk reduction, climate change and food security. But to a great extent, sustainability in universities is at an early stage of the learning process⁸ in which

¹ United Nations (2012b), Report of the United Nations Conference on Sustainable Development – Rio de Janeiro, Brazil, p.1. Retrieved from: <http://www.unccd2012.org/content/documents/814UNCSD%20REPORT%20final%20revs.pdf>.

² Report of the World Commission on Environment and Development: Our Common Future (1987), p. 39. Retrieved on 7th July, 2014 from: <http://www.un-documents.net/our-common-future.pdf>.

³ Ibid, p.17.

⁴ Sustainable Development Law and Legal Definition, USLegal Home. Retrieved on 7th July, 2014 from: <http://definitions.uslegal.com/s/sustainable-development>.

⁵ Bourn, D. (2014) Development Education, Education for Sustainable Development and Global Perspectives within Higher Education. Development Education research Centre, Institute of Education, p.5. Retrieved on the 7th June, 2014 from: www.heacademy.ac.uk.

⁶ Lafferty, W.M. (2004) Governance for sustainable development. The challenge of adapting form to function. Edward Elgar, Cheltenham, p.15.

⁷ Agenda 21. (1992) United Nations Conference on Environment and Development. - Rio de Janeiro, Brazil. – 1992, p. 320. Retrieved on 28th June 2014 from: <http://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>.

⁸ Mulder, K., Segalas, J., Ferrer-Balas, D. (2012) How to educate engineers for/in sustainable development: Ten years of discussion, remaining challenges. *International Journal of Sustainability in Higher Education* 13 (3), pp. 211–218.

much must be learned for SD to become fully implemented and for higher education to become a true leader in sustainable development¹ and contribute to it.

Many experts have dedicated their research to the question of the interrelationship between universities and the idea of SD, including Chrystalbridge, M., Dale, A., Desha, C.J., Hargroves, K., Hesselink, F., Hopkins, C.A., Jickling, B., McKeown, P., Mieg, H.A., Newman, I., Rizzi, A., Scott, W., Tilbury, D., Vare, P., Van Kempen, P.P., Wals, A.E.J., and Ukrainian scientists Maslovska L.T., Nepeyina G.V., Paton, .E., Sadovenko A.P., Sereda V.I., Vusotska O.E. and others (table 1). On average 92% of publications on SD address both universities and sustainable development, but the trend is the growth from 84% in 2007 to 95% in 2014.

Sustainable development has already been a concern for several decades; and the interest of universities in participation in it is on the rise as a response to social demand. On the other hand, we cannot say that the idea of sustainability is peculiar to a specific sector like academia, or any other. The very idea of sustainability, due to its

¹ Waas, T., Verbruggen, A., Wright, T. (2010) University research for sustainable development: definition and characteristics explored. *Journal of Cleaner Production*, 18, pp. 629-636.

complexity, claims joint efforts in order to attain the very least result. So, it is **cooperation** between international organizations like United Nations, the private sector and the academic society (HEIs) which generates the most progress on the issue.

The concept of Triple helix puts universities as equal partners with the government and industry which could generate economic development in knowledge-based society². Universities enrich people with competencies and nations with intellectual capital.

Taking into account contemporary literature review on universities and sustainable development, as well as the role of universities in fostering sustainable development at regional level³, we have come up with an analytical framework of 'universities in the sustainable development paradigm' (fig.1). It is the basis of our review and it could serve other researchers as a basis for further analysis.

² Leydesdorff, L. (February, 2012) The Triple Helix of University-Industry-Government Relations. Retrieved from: <http://eprints.rclis.org/16559/1/The%20Triple%20Helix%20of%20University-Industry-Government%20Relations.Jan12.pdf>.

³ Sedlacek, S. (2013) The role of universities in fostering sustainable development at the regional level. *Journal of Cleaner Production*, 48, pp. 74-84.

Table 1

NUMBER OF PUBLICATIONS ON UNIVERSITIES IN SD AT SCIENCEDIRECT DATABASE*

Year	Full text search	Keyword search		
	«sustainable development»	«sustainable development»	«universities» + «sustainable development»	«education» + «sustainable development»
2014*	21611	220	210	24
2013	27003	271	257	25
2012	22131	235	218	12
2011	18092	223	212	3
2010	14841	164	148	11
2009	12871	157	146	9
2008	11030	122	112	3
2007	9521	121	102	1
Total	204719	2160	2002	110

* ScienceDirect database. Data as of July 2nd 2014. (Retrieved from: <http://www.sciencedirect.com/science/search>).

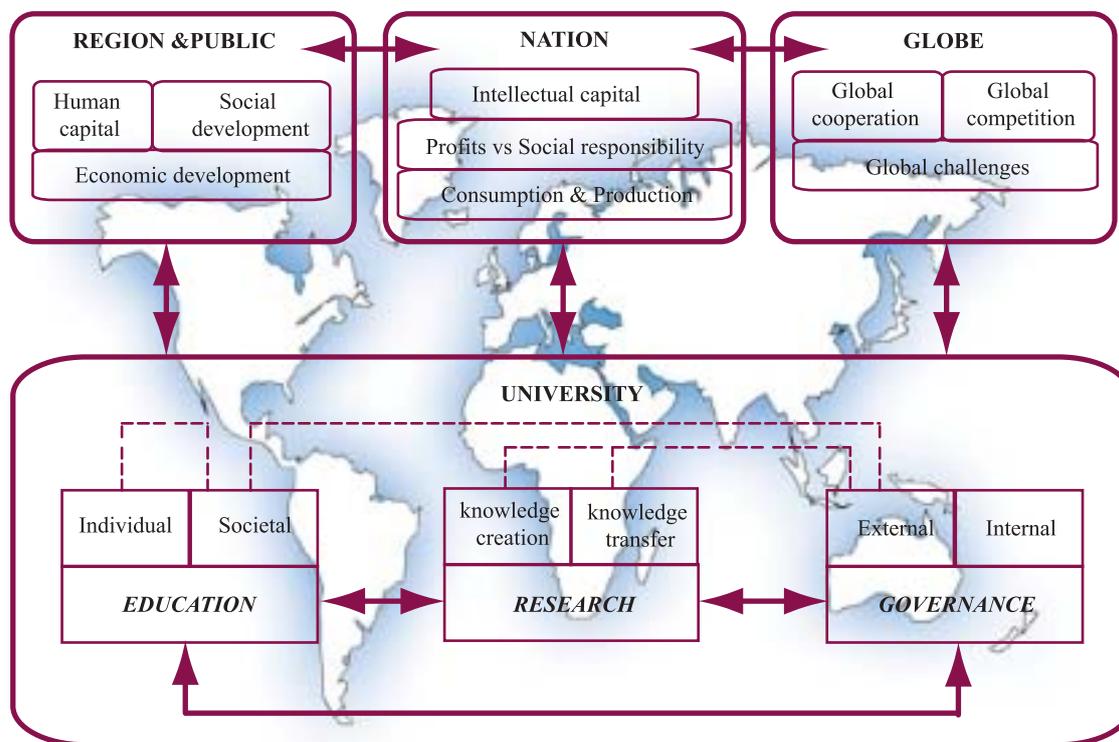


Figure 1. Analytical framework for universities in sustainable development paradigm

ESD at the national level

According to the first report of the Decade, ESD was finding its place in education communities: nearly 100 countries across the world had set up national coordinating bodies, viewing ESD as a relevant approach to global problems. In some cases, ESD was evoked as a theoretical framework without the evidence of inclusion in the curricula; out of a sample of 50 countries 26 countries reported no evidence of ESD in 2008, but by 2012 16 of them no longer fell into that category. We can perceive an estimated increase of 34% from 2008 to 2012¹. From the UNESCO survey data, 59% of countries have already implemented actions on Biodiversity education, and these actions are included at almost every educational level. From those countries, 95% include it in primary education, 100% in secondary education, 83% in higher education, and 85% in teacher education². Also, SD is not just an obligation, but also a big business opportunity (Note 2).

In the United States of America much attention is paid to Climate Change education. Collective efforts

by state and local authorities, universities, schools and non-governmental organizations are essential complements to federal programs that educate the public regarding climate change. State agencies concerned with environment and energy issues provide education and training for teachers, and that is often carried out together with universities and local utility companies. At the middle and high school levels, local school systems are adopting climate change curricula and activities; and the universities with the support from non-governmental organizations educate staff and students about the importance of energy efficiency. Apart from that, a variety of non-governmental organizations (wildlife conservation groups, science-based and education organizations) are making efforts, by conducting programs and surveys, producing brochures, writing media articles etc. on establishing public awareness about the importance of sustainable development, and in particular — about the science underlying, impact of, and possible solutions to climate change³.

EU approaches SD on a wide perspective, so their sustainable development policies include climate change and clean energy, sustainable transport, sustainable consumption and production, conservation and

¹ UNESCO (2012) Shaping the Education of Tomorrow. 2012 Report on the UN Decade of Education for Sustainable Development, Abridged, p.12. Retrieved from: <http://unesdoc.unesco.org/images/0021/002166/216606e.pdf>.

² UNESCO (2012), p. 18.

³ Ibid.

management of natural resources, public health, social inclusion, demography and migration, global poverty and sustainable development challenges. The European Commission's «Updated strategic framework for European cooperation in education and training» is to guide cooperation in education for sustainable development till 2020, and the «Lifelong Learning Programme 2007-2013» was a prime tool for developing the role of education and training systems. Meanwhile, many papers deal with sustainable development in various EU countries and many of them address academic freedom as an internal principle for managing universities, like in Sweden¹, Portugal², France³, the Czech Republic⁴ or region of Central and Eastern Europe⁵.

Note 2.

The global waste market, from collection to recycling, «is estimated at 410 billion USD a year». Recycling is a sector which is likely to grow steadily; for example, the 'Waste to Energy' market was worth 19.9 billion USD in 2008 and expected to grow by 30% by 2014. Recycling is the way to substantial resource savings. Thus, «every tonne of paper recycled, 17 trees and 50% of water can be saved»⁴. But sustainable development is far more than just recycling; it involves a lot of approaches, both economic and social development, and environmental protection.

¹ Sammalisto K. & Brorson T. (2008) Training and communication in the implementation of environmental management systems (ISO 14001): a case study at the University of Gävle, Sweden, *Journal of Cleaner Production*, Volume 16, Issue 3, February 2008, pp. 299-309, <http://dx.doi.org/10.1016/j.jclepro.2006.07.029>.

² Ferreira S., Cabral M., da Cruz N.F., Marques R.C. (2014) Economic and environmental impacts of the recycling system in Portugal. *Journal of Cleaner Production*, Available online 27 May 2014. <http://dx.doi.org/10.1016/j.jclepro.2014.05.026>.

³ Gombert-Courvoisier, S., Sennes, V., Ricard, M., Ribeyre, F. (2014) Higher Education for Sustainable Consumption: case report on the Human Ecology Master's course (University of Bordeaux, France). *Journal of Cleaner Production*, Volume 62, 1 January 2014, pp. 82-88. <http://dx.doi.org/10.1016/j.jclepro.2013.05.032>.

⁴ Labodova, A., Lapčik, V., Kodymova, J., Turjak, J., Pivko, M. (2014) Sustainability teaching at VSB – Technical University of Ostrava. *Journal of Cleaner Production*, Volume 62, 1 January 2014, pp. 128-133, <http://dx.doi.org/10.1016/j.jclepro.2013.03.019>.

⁵ Adomssent, M., Fischer, D., Godemann, J., Herzig, Ch., Otte, I., Rieckmann, M., Timm, J. (2014) Emerging areas in research on higher education for sustainable development – management education, sustainable consumption and perspectives from Central and Eastern Europe. *Journal of Cleaner Production*, Volume 62, 1 January 2014, pp. 1-7. <http://dx.doi.org/10.1016/j.jclepro.2013.09.045>.

In Norway, the Partnership for Education and Research about Responsible Living, an international network of experts, researchers, teachers and policy-makers, coordinates actions on encouraging people to contribute to constructive change through the way they choose a lifestyle. This network also develops values-based, holistic, interdisciplinary, personal and practical educational approaches⁶.

But it is not only developed countries that are taking actions related to ESD. In the Philippines, the National Environmental Education Action Plan (2005-2014) mandated the integration of environmental education in the school curricula at all levels; an integrated system for teacher training was established too. Overpopulated India and China are also considering ESD. In India, the Centre for Environmental Education has run the campaign «CO2 Pick Right» on climate change and individual lifestyle choices in over 70,000 schools. The result was a partnership between government and a non-governmental institution, and the program made it possible to raise awareness of the importance of choices and daily practices for sustainability. And in Mongolia, UNESCO supports the Government's actions to mainstream ESD in the education system through curricula development and teacher education⁷.

ESD in Ukraine

In Ukraine, it was decided to create a new, integrative and inclusive curriculum for ESD, rather than offering additional material for existing school subjects, and to implement it within the current model of state school⁸. Ukrainian educators are used to linking sustainable development with the field of natural science, and that approach is definitely beneficial for ESD students. However, ESD also demands great attention to social aspects, because a sustainable society cannot function without democracy, on-going dialogue and the empowerment of people, and it is only possible when human relationships are based on respect, tolerance and cooperation; these aspects go far beyond natural sciences, from the perspective of the standard school curriculum they are already 'social studies', social psychology or even philosophy⁹.

The 'National Paradigm for Sustainable Development of Ukraine', published in 2012 by the Institute of Environmental Economics and Sustainable Development of the National Academy of Sciences of Ukraine, defined current trends, strategic issues and perspective approaches of the sustainable development in Ukraine

⁶ UNESCO (2012), p. 21.

⁷ UNESCO (2012), p. 22.

⁸ Ibid, p. 23.

⁹ Ibid.

with regard to the global environment, and in accordance with particular goals and the existing potential of the Ukrainian nation. Education is defined both as a fundamental and important way of achieving sustainable development¹, having the most impact on establishing social awareness in such questions as ecology, ethics, formation of values and approaches, skills and behaviors related to sustainable development. Nevertheless, it is mentioned that the time since the proclamation of SD principles in terms of national economic and social realities has shown that the model of market transformation of Ukrainian society appeared to be destructive and led to severe social losses. A middle class has not been established, and democracy, social and political stability as based upon middle class cannot function. That is why several positive achievements such as implementation of education on environment and ecology in a lot of educational institutions, diversification of cultural activities, etc. were shadowed by failures in areas like healthcare, social infrastructure and others². Moreover, the terrorist attacks that took place in 2014 showed the lack of society-wide sustainability ideas.

The main forms of actions aimed at achieving sustainability at universities are various projects performed in cooperation with the private sector, non-governmental and international organizations, and other stakeholders. Besides, some studies show that stakeholders from outside the academic world helped to infuse sustainable development more effectively than if only academic inputs were used³. Still, there is no evidence of a large-scale implementation of ESD in the curriculum of HEIs. So, there is a need to rethink the entire approach to ESD in the national education system.

International organizations in ESD

With regard to the problem of sustainable development, and ESD in particular, a great deal of attention to the issue is paid by international organizations. This is no wonder, taking into consideration the global scale of tasks to be resolved, as only joint forces, both intellectual and financial, are needed to accomplish the high goal of shifting to a 'greener' society. International organizations like the UN are devoting a great deal of effort to analyzing the current situation, conducting research, making suggestions and taking dynamic actions to add to sustainability

improvements worldwide. They are also the key agents to track progress in ESD both in individual countries and globally.

International organizations act mainly as a catalyst for real actions. Taking into consideration general trends in ESD worldwide, UNESCO experts have noted a significant pedagogical shift and the evolution of more types of learning. Sometimes ESD is being taught through different types of learning and connect more than one subject area. In the global monitoring and evaluation survey, nine types of learning associated with ESD were distinguished; they are briefly described below⁴:

Discovery learning – when the learners are immersed in a rich context where they encounter some element of mystery; their curiosity is aroused and they begin to make sense of their experience through their own exploration;

Transmissive learning – using didactic skills like presenting, lecturing, story-telling, and supporting materials like workbooks, instruction forms, visuals; a body of knowledge, set of rules or code of conduct is transferred to the learners;

Participatory/collaborative learning emphasizes working together with others and active participation in the learning process, which tends to focus on resolving a joint issue or task;

Problem-based learning is focused on solving real or simulated problems, in order to better understand the issue or find ways to make real-life improvements. Issues are either identified by the learners, or pre-determined (e.g. by teachers, experts, commissioning bodies);

Disciplinary learning – taking questions of a disciplinary nature (e.g., geographical and biological) as a starting point, to better understand underlying principles and expand the knowledge base of that discipline;

Interdisciplinary learning – choosing issues or problems as a starting point, and then exploring them from different disciplinary angles to arrive at an integrative perspective on possible solutions;

Multi-stakeholder social learning – bringing together people with different backgrounds, values, perspectives, knowledge and experience, from both inside and outside the group initiating the learning process, to set out on a creative quest to solve problems that have no ready-made solutions;

Critical thinking-based learning – exposing the assumptions and values that people, organizations and communities live by and challenging their merit from a normative point of view (e.g. animal well-being, eco-centrism, human dignity, sustainability) to encourage reflection, debate and rethinking;

¹ National Academy of Sciences of Ukraine (2012) National Paradigm for Sustainable Development of Ukraine, Kyiv. - 2012, p. 18.

² Ibid, p. 33.

³ Boman, J. & Andersson, U.P. (2013) Eco-labelling of courses and programs at University of Gothenburg. *Journal of Cleaner Production*, 48. 2013, pp. 48-53.

⁴ UNESCO (2012), p. 26.

Systems thinking-based learning—looking for connections, relationships and interdependencies to see the entire system and recognize it as more than the sum of its parts; and to understand that an intervention in one part affects other parts and the entire system.

Other forms of learning have also been defined: philosophical enquiry at all ages, exploring values, self-learning, experimental learning, community-based learning, action-based learning and others. It is also noted that ESD can never consist of only one form of learning; it is always a blend of types, which has to fit the group of learners (their age, knowledge, interests etc.), the learning context and the resources available¹.

About 100 Regional Centers of Expertise (RCE) on Education for Sustainable Development as UN University initiatives from various countries have formed a global network to address local sustainable development challenges through research and capacity development. RCEs aim to bring together educational institutions, strengthening communication, coordination and collaboration among these stakeholders with the aim of promoting education for sustainable development². This is one of the major international contributions to local development with university initiatives. Still, SD is the problem of personal, regional and national development, and an international and global challenge too.

University competencies in ESD

HEIs are beginning to reorient their education, research, operations and community outreach activities towards sustainability. This shift is taking place despite economic pressures and educational reforms pushing for more efficiency and cost effectiveness, which can stand in the way of this reorientation. Some universities are using sustainability to organize and profile themselves in a new way. HEIs are also beginning to advance systemic thinking by examining connections, relationships and interdependencies. According to UNESCO experts, there are indications that some universities are developing and introducing new forms of interactive, integrative and critical learning that can help people to understand and engage in sustainable development. Teaching and research are placing a new emphasis on real-world challenges to sustainability in the communities that surround campuses. This new focus is dissolving boundaries and fostering intellectual dialogue between traditional institutions and citizens.

It is also noted that HEIs are contributing to the development of sustainability competence within and beyond the higher education community

through their courses, professional development programs, community outreach activities, etc. In order to be effective, 'education on sustainability' must be based upon a systems approach, be immense, focus on more than knowledge, and consider students' values and behaviors in order to improve their problem-solving abilities³. There is no doubt that all the changes in programs and curricula should be based upon a 'values' approach, and be supplemented by holistic, trans-disciplinary approaches, supported by the usage of a competences strategy.

The Generic Sustainability Competence was defined on the base of the ideas of *Gestaltungskompetenz*, developed in Germany⁴. According to their definition, it consists of several competences, as outlined in Figure 2.

Lambrechts et al.⁵ suggested that a balance should be made between the already integrated competences (for example, of responsibility and emotional intelligence) with those related to a systemic, future outlook, and action skills. It was concluded that the definition of sustainable development competences should be reviewed periodically, in order to analyze and mark progress and to report on the evolution of approaches to sustainability as incorporated into universities' systems⁶. So universities should be encouraged to report to the public and engage public discussion of the topic.

ESD is increasingly perceived as a catalyst for innovation in education, and it is often at the heart of new, creative multi-stakeholder configurations involving schools, universities, communities and the private sector⁷. In addition, though more research is needed to document that, there is no doubt that ESD is quality education, as it is related to academic gains as well as boosting people's capacities to support sustainable development.

Nevertheless, it was documented that, in general, universities fall behind companies in helping societies become more sustainable⁸. The

³ Pappas, E., Pierrakos, O., Nagel, R. (2013) Using Bloom's Taxonomy to teach sustainability in multiple contexts. *Journal of Cleaner Production*, 48, pp. 54-64.

⁴ UNESCO (2012), p. 45.

⁵ Lambrechts, W., Mula, I., Ceulemans, K., Molderez, I., Gaeremynck, V. (2013) The integration of competences for sustainable development in higher education: an analysis of bachelor programs in management. *Journal of Cleaner Production*, 48, pp. 65-73.

⁶ Ibid.

⁷ UNESCO (2012), p. 5.

⁸ Lozano, R., Lukman, R., Lozano, F.J., Huisingh, D., Lambrechts, W. (2013) Declarations for sustainability in higher education: becoming better leaders, through addressing the university system. *Journal of Cleaner Production*, 48, pp. 93-100.

¹ UNESCO (2012), p. 28.

² Sedlacek (2013), p. 80.

analysis of texts of eleven declarations, charters, and partnerships developed for promoting sustainable development in HEIs showed that they could be used to augment university systems in the context of ESD by adding such elements, as: collaborating with other universities, fostering transdisciplinarity, making SD an integral part of their institutional framework, creating on-campus sustainable development life experiences, and providing education and training for teachers. The documents challenge university leaders and their faculties to ensure that sustainable development is the ‘Golden Thread’ throughout all university systems¹. Lee et al.², having analyzed the experience of Australian universities, concluded that if a commitment to ESD in a university (and in the higher education system in general) is not stated as a publicly espoused value, then the organization’s commitment for ensuring that SD is enacted is doubtful.

The concept of sustainable development should be included in the university’s

mission and profoundly integrated within its educational programs and courses. It should also be integrated with all other activities performed by a university, such as research and commercialization of knowledge and research results (Fig. 3). Taking into consideration the modern functions of a university, its core roles – education, research and governance – they are being transformed too. Apart from the traditional role of educating, universities are becoming learning institutions by serving the needs of society. Thus, universities fulfill a central role in a sustainable development processes since they are key players in both the individual as well as the social or collective learning systems³. In terms of research function, having a notable effect on the regional development, universities are able to cope with the need for a mixture of basic and applied research and the need for multiple transdisciplinary research; having all necessary organization and tools, they can detect and identify the directions in which change is needed and to guide decision-makers⁴.

¹ Lozano (2013), pp. 93-100.

² Lee, K.-H., Barker, M., Mouasher, A. (2013) Is it even espoused: An exploratory study of commitment to sustainability as evidenced in vision, mission, and graduate attribute statements in Australian universities. *Journal of Cleaner Production*, 48, pp. 20-28.

³ Sedlacek (2013), p. 76.

⁴ Kemp, R. & Martens, P. (2007). Sustainable development: how to manage something that is subjective and never can be achieved? *Sustainability: Science, Practice & Policy*, 3 (2), p. 13.

Elements of a Generic Sustainability Competence

Competence to think in a forward-looking manner, to deal with uncertainty, and with predictions, expectations and plans for the future.

Competence to work in an interdisciplinary manner.

Competence to see interconnections, interdependencies and relationships.

Competence to achieve open-minded perception, trans-cultural understanding and cooperation.

Participatory competence.

Planning and implementation competence.

Ability to feel empathy, sympathy and solidarity.

Competence to motivate oneself and others.

Competence to reflect in a distanced manner on individual and cultural concepts.

Figure 2. Elements of a Generic Sustainability Competence

Source: UNESCO (2012).

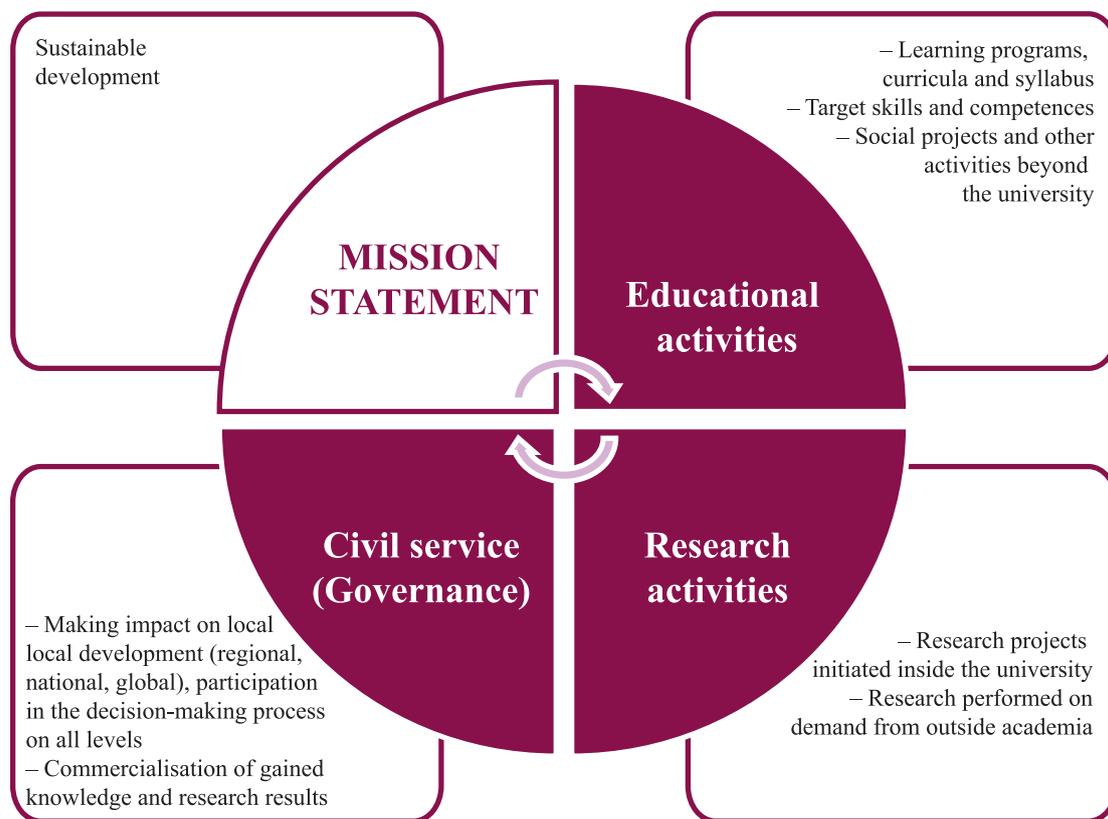


Figure 3. Sustainable development: a university's key dimensions.

For the purposes of SD a transition to more integrative science is needed, and that requires a re-orientation of research agendas which earlier were traditionally defined by academics and now are defined in a multi-stakeholder environment in order to solve various multidisciplinary societal needs and problems. And in terms of governance, there is no doubt that the university faculty and administrators are important actors for regional development processes because they participate and provide their expertise, contributing to economic and human well-being¹. But, since the scale and complexity of these universities' activities have increased a lot, the need arose to improve the governance system so that it could cope with these complexities, and that is an additional challenge for modern universities.

A study at universities in the USA, Latin America, and China in 2013 suggested that

¹ Goldstein, H.A. (2009) What we know and what we don't know about the regional economic impacts of universities. In: Varga, A. (Ed.), *Universities, Knowledge transfer and Regional development*. Geography, Entrepreneurship and policy. Edward Elgar, Cheltenham. 2009, p.11-35.

inclusion of the resource management topics in designing academic programs is the most preferred approach in all three regions for the promotion of sustainable development, followed by development of programs that could cover topics in areas of human capital development, human systems design and sustainable economic development and prosperity². The Chinese are very active at promoting the «green university» idea, as it is very close to their tradition³.

With the declared priority for SD, the universities are able to influence communities, social and economic development, thereby transforming regional development in one way or another. Moreover, the impact of HEIs grows as they become more active agents on the global arena, cooperating

² Khalili, N.R., Duecker, S., Ashton, W., Chavez, F. (2014) From cleaner production to sustainable development: the role of academia, *Journal of Cleaner Production*, Available online 28 February 2014, <http://dx.doi.org/10.1016/j.jclepro.2014.01.099>.

³ Yuan, X., Zuo, J., Huisingh, D. (2013) Green Universities in China – what matters?, *Journal of Cleaner Production*, Volume 61, 15 December 2013, pp. 36-45, <http://dx.doi.org/10.1016/j.jclepro.2012.12.030>.

with the private sector, and sometimes guiding corporations towards more social responsibility. Having full potential to affect wider society, through performing their three main functions (as illustrated in Figure 3), universities are that linchpin between globally-initiated priorities and their inoculation in real life practices.

Conclusion

A more sustainable university is defined as the one which: strives for academic excellence; tries to embed human values into all aspects of people's lives; and promotes and implements sustainability practices in teaching, research, community outreach, waste and energy management, and land use planning through continuous sustainability and monitoring¹. Only by fulfilling at least these tasks can the HEI become more sustainable.

Modern society experiences a worse environment than a century ago, but the future could be even worse if we do nothing. We have in mind not only ecology, but weapons and healthcare, economies and societies that could destroy the Earth and its population. Anyone who can change the world should act. Universities face the need for ESD in various aspects that are theoretically and practically developed at different levels.

SD in learning activities is vital due to the massive impact of alumni who do change the world we all live in. Still, much should be done, as even in one of the best world-class universities — Harvard — there is no «sustainable development competence»; one can find only that of «sustaining productive customer relationships» in the Harvard University Competency Dictionary.

Congruity with the sustainability principles in research activities should be a must checkpoint before their results get into the commercialization path and even before the start of the experiments which could potentially be harmful, like those that could be treated as weapons.

SD in a university's business activities and bureaucracy should come before profits, so societies, local communities and individuals can benefit in the long run.

A modern university cannot become a world-class university or a 'flagship' university without being actively involved in ESD. In times when the primary goal of higher education is shifted from gaining information and knowledge to gaining skills and competences needed to process that information, make decisions, deal with uncertainty etc., the mission of HEIs falls behind education, as the higher education system in contemporary

environment has to teach values. This mission is now not only educating a highly skilled labor force, but also 'growing' global citizens mindful of their individual actions and the repercussions of their actions, and ready to sacrifice short-term profit for the future greater value. That is why universities, possessing the necessary tools and potential to address societal needs, are key institutions to affect the implementation, inoculation and adoption of the principles of the SD in society at large.

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New Management Challenges for Ukraine's Universities: Surviving the 2014 Reform



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Abstract

This article is devoted to the challenges that university education in Ukraine faces, including those that appear due to the adoption of the renewed law «On Higher Education». Systemic changes to higher education in Ukraine were needed for a long time even before the Bologna Declaration process started. They should allow the country and its universities, students and professors to feel integrated in the global system of tertiary education leading to the assurance of the quality of education in accordance with the highest international standards in learning and research. University autonomy and university reputation management are new to Ukraine, and present significant challenges to university administrators. The introduction of reforms brings many institutional changes and will lead not only to the creation of the National Agency for Quality Assurance in Higher Education but also to a reduction in the number of universities in Ukraine.

Keywords: universities, Ukraine, management challenges, autonomy, quality assurance, reforms.

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Introduction

On 27 June 2014 Parliament, the Verkhovna Rada of Ukraine, adopted Bill 1187-2, thereby enacting a new law by the name of «On Higher Education» in Ukraine. This legislation is revolutionary for a variety of reasons — not least because it represents a unique case where a legal act was written not by (or even under the auspices of) politicians, but rather was composed, debated, modified as a result of compromise, finalized, and then lobbied by higher education professionals and students. The law introduces changes to the system of higher education (i.e. to the form and substance of university degrees), to the way quality is assured (i.e. to the role of the Ministry and other government agencies), and to the manner in which universities are managed. Indeed, this final aspect of the enacted reforms — introduction of university autonomy — gained the most press in the years preceding Parliament's historic vote, and in the wake of Maidan (and the anti-authoritarian discourse of the 2014 Revolution of Dignity), few people question the need for decreasing the dependency of Ukraine's universities at the whim of Ministry of Education officials. However, autonomous management requires specific skills which (in the opinion of this author) few university administrators in Ukraine possess. Indeed, the flip-side of increased autonomy is increased responsibility — a condition that dictates a new imperative for institutional survival and prosperity.

The need for reform

When the author of this article first became involved in drafting the various versions of bills entitled «On Higher Education (9 bills were tabled in Parliament between December 2010 and January 2013), the «buzz word» among university administrators and education professionals was «autonomy»². According to

² For concepts of academic freedom and university autonomy see Verbitskaya, L.A. (1996), pp. 289–294. Moreover, as international experience shows on national level autonomy of education system may be viewed in different forms. See Iftene, C. (2014), pp.47-53.

this paradigm, if universities were given more freedom to manage their own finances, more independence with respect to designing and implementing unique academic programs, greater ability to decide whom to hire (including independently, recognizing foreign academic credentials) and how much to pay university lecturers for their teaching and/or research, the quality of higher education in Ukraine would improve. Concomitantly, all (or most) of the ills of the higher education system were traced to the bureaucracy of the Ministry of Education, and the solution, according to higher education professionals, was to be found in greater managerial autonomy for universities.

On the other side of this argument was Dmytro Tabachnyk who, when appointed Education Minister in 2010, proceeded to draft a Bill entitled «On Higher Education» (7486-1) that increased the influence of the Ministry of Education on daily management decisions made in Ukrainian universities. In order to facilitate centralized management¹, Tabachnyk's original bill proposed to reduce the number of higher education institutions operating in Ukraine by setting a lower limit on the number of students attending a «university» (minimum 10,000), an «academy» (minimum 3,000), a «college» (minimum 1,000) etc. This legislative initiative was widely interpreted as a poorly veiled attempt to downgrade universities such as Kyiv-Mohyla Academy and the Ukrainian Catholic University whose academic communities were deemed politically disloyal to the Yanukovych regime, and each of which was small in terms of enrollment levels.²

Today, most in Ukraine would agree that given the size of its population, the country has far too many higher education institutions. However, closing universities through administrative fiat in a post-Maidan reality is politically impossible. The new legislation will likely lead to similar results using «market means», but the very fact that many universities (private and public) will close over the next 5-7 years will nonetheless lead to significant social tensions. The fact that closures will be due to poor institutional management rather than Ministerial decisions may decrease the stress on government officials in Kyiv, but it will not eliminate social turmoil

from the regions. Furthermore, introduction, via the new legislation, of a new system of quality assurance, and radical increase in universities' flexibility in the areas of degree granting, accreditation, and hiring/promotion practices will cause confusion. Tensions are inevitable, and in many cases the reforms will lead to painful changes (including job losses), but the end result (it is hoped!) will be a national system that provides students with greatly improved university education. Long-lasting reforms in higher education started in many countries, but their impact shall be long-lasting as well³.

System Changes

When the Ukrainian Ministry of Education (at the time headed by Stanislav Nikolayenko) signed the Bologna Declaration in 2005, it committed itself to introducing a 3-cycle system of higher education in Ukraine by 2010⁴. With respect to the first two cycles, the system was changed without legislative amendment (i.e. changed in form, but not in substance); the third cycle was not introduced (except for experimental implementation at Kyiv-Mohyla Academy)⁵ until after the new law was adopted.

Formally, European-style Bachelor's and Master's Degrees have been offered in Ukraine for many years. During the 2000's, the legacy of the Soviet-era 5-year system was split, with the first four years made equivalent to a Bachelor's degree, and the final «Specialist» year renamed into a Master's. Although several universities used the Bologna reforms to introduce stand-alone 2-year Master's programs equivalent to the European second cycle of higher education, this was a limited phenomenon with the vast majority of students proceeding almost automatically from the 4th year of Bachelor's studies to their 5th year (formally called a Master's). Indeed, according to the Law «On Higher Education» adopted in 2001, only a Master's Degree constituted a «complete higher education». The Bachelor's degree was, therefore, relegated to having interim status — a fact that was also reflected in the funding system, which saw over 90% of state-funded BA graduates offered state-funded MA-level places, and «cross admission» (enrollment in a Master's program in a specialty area different from one's Bachelor's degree) explicitly forbidden by the Ministry of Education.

Notwithstanding the nominal nature of the systemic reforms instituted during the 2000's under the auspices of the «Bologna Process», a European Credit Transfer System (ECTS) was introduced in

¹ Given the evidence of grand scale corruption uncovered after the 2014 Revolution (see Television interview with First Deputy Minister of Education Inna Sovsun centralization of university management was probably motivated by the need to facilitate graft and the transfer of rents upwards through the regime hierarchy.

² The tabling of Bill 7486-1 and its successor Bill 9655 sparked student protests (see Kampaniya «Proty dehradatsiyi osvity» (2010 — 2013) and official expressions of concern from the Canadian, US, and EU ambassadors who saw this legislative initiative as being aimed at suppressing two higher education institutions that had received significant support from the Ukrainian Diaspora, and had gained international prominence.

³ See Yamada, R. (2001), pp. 277-291; Brunori, P., Peragine, V., Serlenga, L. (2012), pp. 764-777; Suthathip, Y. & Ying, C.N. (2014), pp. 94-105.

⁴ See also Ionel, D. & Nicoleta, V.E. (2013), pp.927-930.

⁵ For more information see www.gradschool.ukma.edu.ua.

2009, and Bologna-compliant diploma supplements (a requirement for mobility within Europe) began to be issued by most universities at the request of students. However, the study load of Ukraine's version of the ECTS was mandated as 36 hours (usually with 12-15 of these being contact hours), compared to 25-30 in EU countries. Program comparability was, therefore, dubious: Ukrainian students spend 20-30% more time in the classroom than their European colleagues, earning the same degrees. On the flip-side, Ukrainian university lecturers also carry a much heavier course load than their EU colleagues, and not surprisingly, their research output suffers.

The essentially superficial changes to the Ukrainian higher education system introduced during the 2000's were accomplished without significant amendments to higher education legislation. However, the fact that ECTS and the terminology associated with the Bologna 3-cycle system had already been introduced into the higher education discourse in Ukraine greatly eased their introduction into legislation when political conditions finally became conducive to reform after the 2014 Revolution of Dignity. The legislation adopted in June 2014 enshrines ECTS in Ukrainian law (Article 1, Section 9), fixes the value of one ECTS credit as equaling 30 hours of study, and one year of full-time study as corresponding to 60 ECTS credits (Article 1, Section 14). Accordingly, a Bachelor's Degree program should consist of 240 credits while a Master's Degree requires acquisition of 90-120 credits (i.e. 1.5 – 2 years of study) for professional MA's, and 120 credits for a research Master's (Article 5). The maximum classroom time allowed for a university instructor has been reduced from over 900 to 600 hours per year (Article 57, Section 2).

The true stumbling block for the new Law «On Higher Education» (and indeed, since all other Bologna requirements could be met without legislative change, the primary reason that a new law was required at all) was the introduction of a Bologna-compliant third cycle: the PhD. Even during the final months preceding the adoption of Bill 1187-2, heated debate continued as to the «kandydat nauk» title: the powerful Presidium of the Ukrainian Academy of Sciences lobbied conservation of the existing system of post-graduate research training as a «national peculiarity», but was 'de facto' overruled by Maidan activists. But, the issue was not limited to arguing whether the «kandydat nauk» should be renamed into a «Doctor of Philosophy» title. Obtaining a Bologna-style PhD involves a student experience that is different from Ukraine's traditional aspirantura (post-graduate) system, which is based on a «master-slave» relationship between supervisor and student with little imposed structure.¹ Structured PhD programs involve not only research and dissertation writing

(usually with multiple supervisors and significant student mobility), but also completion of a program of didactic courses. The system of thesis defense also differs significantly in the Bologna-style PhD with few EU countries continuing to use standing committees to evaluate dissertations, giving preference to university-formed 'ad hoc' committees composed of narrow specialists from the candidate's specialty research area. Finally, PhD degrees are generally granted in Europe by *universities*, whereas in Ukraine, a large proportion are granted with the involvement of the National or Sectoral Academies of Sciences.

Article 5 of the newly adopted Law «On Higher Education» stipulates that, in addition to preparing a dissertation based on original research, successful graduation from a PhD program requires completion of a didactic component consisting of 30-60 ECTS credits, and that an institution that offers this component must be licensed to do so (i.e. obtain the rights and obligations of a higher education institution). Furthermore, Article 6 stipulates that thesis defense may be conducted by a standing committee (i.e. the existing system of «specialized academic councils» — generally existing within institutes of the Academy), or by an ad hoc committee created by a university for the purposes of examining a particular dissertation (i.e. the system in place in most European countries); the choice of examining committee is decided by the student. According to Article 7, a PhD diploma issued to a successful graduate must state both where the thesis was defended (i.e. in a standing or ad hoc committee), and in which institution the relevant program was completed (i.e. which university offered the didactic component). Inevitably, such a system will result in a decrease in the number of PhD's prepared by institutes of the Academy — a positive outcome if the research capacity of Ukraine's universities is to be increased. Furthermore, the legislated changes will lead (it is hoped), to universities paying greater attention to the quality of work produced by their graduates; institutional responsibility for graduating PhD's will be increased by the exigencies of a university's need to maintain its reputational capital rather than hiding behind the diffused responsibility offered by the existing system of specialized academic councils (standing defense committees) legitimized by the state.²

¹ See Vynnyts'kyy, M. I. (2012) S. 1, 12.; Vynnyts'kyy, M. I. (2008), pp. 20-27.

² Under the existing system of standing examination committees, it is not uncommon for students pursuing the «kandydat nauk» degree to complete their dissertation in one institution, and then defend their thesis in another. Upon graduation, they receive a diploma that specifies the institution where the thesis was defended, but makes no mention of the university or institution where it was prepared. On the other hand massive publications are criticized too. See Linton, J., Tierney, R., Walsh, S. (2011), pp. 244-257.

However, the reformed system of post-graduate research training put in place by the new Law is essentially a compromise: the old aspirantura system (ending in a thesis defense before a standing committee) will 'de facto' continue to exist in parallel with new structured PhD programs (culminating in ad hoc committee defenses organized by universities) that will be implemented gradually by those higher education institutions seeking to demonstrate their Western orientation. In time, students will decide which system enjoys more demand; employers will choose which system produces higher quality graduates.

A similar compromise can be seen in the new Law's introduction of the «junior Bachelor's» degree – a short cycle post-secondary novelty similar to the Associate Degree in the US, and comparable to level 5 of the European Qualifications Framework. Effectively, higher education institutions that are unable to achieve the requirements of Bologna-style Bachelor's programs, and do not possess the requisite research capacity to be called a university or academy under the new Law (e.g. colleges, regional academies and many former pedagogical institutes), have been given the option of maintaining their status as higher education institutions by offering a short-cycle degree.

On the «top-end», the «Doctor of Sciences» degree has also been maintained within the system of higher education, even though its structure has little to do with education as such – this is primarily a research degree (equivalent to «habilitation» in Germany and Poland) obtained by senior/professional research staff¹.

Thus, the system put in place by the new Law «On Higher Education» implements the Bologna 3 cycles of higher education (Bachelor, Master, Doctor) with two additional levels on each side: a «short cycle» junior Bachelor and a Doctor of Sciences. Both the top and bottom add-ons can be seen as «national peculiarities» adopted as part of the negotiated compromises required for the Law's passage.

Quality Assurance

The proclaimed goal of higher education reform is not just to bring post-secondary education in Ukraine into conformity with the system in place in the European Higher Education Area (EHEA), but also to improve the overall quality of the Ukrainian system. Although the European example was useful as an exemplar for achieving

this goal during the legislative drafting process, the actual effectiveness of the new institutional quality assurance structure put in place by Bill 1187-2 will be tested in its implementation.

The decentralization paradigm, lobbied heavily by proponents of increased university autonomy, has been fulfilled in the new Law through the creation of the National Agency for Quality Assurance in Higher Education (NAQA): an institution to which responsibility for program accreditation at all levels of higher education have been delegated (Article 18). Formerly, accreditation was the responsibility of the Ministry of Education whose officials (generally civil servants) were often criticized for overly bureaucratizing the quality verification procedure. The NAQA is to consist of 13 higher education professionals delegated by universities and 7 delegated by Academies of Sciences, plus 3 representatives of employers and 2 elected student representatives (Article 19). Its «expert committees» – responsible for actually conducting program accreditation in specific fields of study – are to be composed of 9-15 specialists from a particular academic and/or professional field (Article 21). In principle, the cooption of professionals into the work of the NAQA should lead to de-formalization of the accreditation process, and to an improvement in program quality. However, much will depend on the degree of activism and civil initiative expressed by both members of the NAQA and its coopted experts on the one hand, and on the initiative, innovativeness and flexibility of university academics on the other hand. It remains to be seen how the new Ukrainian quality assurance process in higher education will work in practice at university level. In the meantime, international experience shows us various examples of models for evaluating the quality of education in higher education having many field differences².

At the national level, responsibility for quality assurance has now been divided between the Ministry (responsible for setting standards – Article 13), and the NAQA (responsible for accreditation – Article 19). But, at the end of the day, educational excellence can only be achieved if a university's academic community is motivated to organize itself to fulfil high quality programs. According to the new Law, accreditation becomes voluntary (required only for those institutions who wish to issue a «state diploma» – Article 25); licensing is required only for newly-created institutions (Article 24). Furthermore, university managers have been awarded broad autonomous powers (Article 32): they are free to institute their own organizational

¹ The Doctor of Sciences degree was retained within the system of higher education at the insistence of the Presidium of the Academy of Sciences, and was heavily lobbied by the Academy of Pedagogical Sciences whose representative argued (dubiously in the opinion of this author) that this degree was equivalent to the EU and North American «post-doctoral degree».

² Yarmohammadiana, M.H., Mozaffary, M., Esfahanic, S.S. (2011), pp.2917–2922.

structures and employee pay scales, to design and implement their own academic programs, to award their own degrees and recognize (or not) the degrees of other institutions (including those issued by non-Ukrainian universities) without recourse to the Ministry or NAQA, to independently administer any profits generated from non-state sponsored tuition fees, or from the sale or licensing of intellectual property produced through research. In other words, with the adoption of the new Law, the management of university education has been devolved to the universities themselves. Although the NAQA may be asked to provide an independent verification of an institution's conformity to standards, the responsibility for achieving such standards (including administering resources appropriately) now falls squarely on the autonomous university itself.

However, the state has not removed itself from the higher education process entirely. The newly-adopted Law finally legally legitimizes the (nominally independent) state testing agency that was formed under Minister Ivan Vakarchuk in 2006¹ — the agency that has been conducting mandatory national exams for Bachelor's level university admissions since 2007. Although this issue was hotly debated in the run-up to the Law's adoption (with several university administrators arguing that admissions criteria should be determined by autonomous universities), the results of national subject-specific entrance exams have now been enshrined in legislation as the primary criteria for admission to all Ukrainian universities (Article 45). To some extent, the centralized role of the state in instituting an entrance exam system can be seen as logical because the admissions tests administered to students across the country are based on a standardized secondary school program instituted by the state. However, the primary reason for the popularity of the entrance test system in Ukraine is its role in reducing the rampant corruption that once existed at the university level during the admissions process.

According to the new Law, the entrance testing system will now serve an additional purpose: exam results and institutional choices top ranked by students will serve as the basis for measuring demand for education at particular higher education institutions, resulting in financial consequences for these universities². During the initial phases of the law's implementation, 20% of state-funded places for BA-level studies per annum will be allocated to

particular universities based on student demand — as determined by the number of students with top results who chose that particular institution and program (Article 73). The remaining 80% will be allocated according to a competition administered by the Ministry of Education (i.e. the same way as all state-funded places are allocated at present). Once the Law is fully implemented, all state-funded places will be allocated to universities based on the choices made by the top students throughout the country, as determined by entrance exam results (Concluding and Transitional Articles, Section 15). In other words, a university's reputation — its ability to attract top students from throughout the country — will determine the amount of state funding it receives.

Challenges of Autonomy

The paradigm of «reputation management» (branding) is new to Ukraine, and will present significant challenges to university administrators in many regions. Although Kyiv-based universities (e.g. Taras Shevchenko National University of Kyiv, National Technical University of Ukraine «Kyiv Polytechnic Institute», National University of Kyiv-Mohyla Academy, and others) have already earned national and international reputations as quality institutions, many universities in smaller urban centers have not. Such smaller institutions are often run by rectors and vice rectors who have remained in their posts for decades, and have gained significant financial benefit from corrupt schemes (e.g. selling diplomas and/or illegally renting property transferred by the state to their institution's care)³. With reputational capital becoming the ultimate arbiter of the state's funding decisions, and with mechanisms in place for increasing management transparency (e.g. Article 80, which requires all university budgets and expenditures to be made public), corrupt practices by university managers should eventually become pointless and, therefore, anachronistic. Those universities whose leaders do not realize this fact, and do not adjust accordingly, will lose funding and their institutions will eventually close.

A prime example of the reformist challenges faced by many higher education institutions in Ukraine is the issue of managing/combating plagiarism, which is vital for many European countries⁴. In recent years the issue of plagiarism in academic dissertations has degenerated into a massive problem in Ukraine, and although public scandals have been few, many educators and students believe the system of postgraduate education has been largely discredited because examiners have looked the other way (corruption

¹ When in opposition (prior to 2010), Dmytro Tabachnyk had been a vocal critic of the national entrance testing agency, claiming that it was illegal. After becoming Minister, Tabachnyk did not completely disallow entrance tests, but significantly reduced their weight in the university admissions selection process — opening himself to criticism that his actions were facilitating corrupt practices.

² Also see Horstschraer, J. (2012), pp. 1162-1176.

³ Also see Urbanovic, J. & Tauginiene, L. (2013), pp. 72-78.

⁴ see Dias, P. C. & Bastos, A.S. C. (2014), pp. 2526-2531.

is suspected in such cases, but has rarely been proved). Article 6 of the new Law introduces both personal and institutional responsibility for academic plagiarism: if all or a portion of a dissertation is found to have been plagiarized, the relevant candidate's degree (PhD or Doctor of Sciences) is annulled, his/her supervisor is disallowed from further supervisory duties (of other students) for two years, as are official examiners, while the institution that hosts the relevant thesis examination committee has its PhD-granting right (accreditation) revoked for one year. Such a sanction should (it is hoped) result in reputational losses, and their risk will provide significant incentives to universities to ensure high quality academic standards for the research degrees that they grant.

However, it should be realized that the authority of reputation will only be effective if a university's academic community is vibrant, activist, and desirous of achieving programming quality levels that students and employers will accept. In other words, in order to be successful in the educational market, an institution must not only ensure minimal compliance to generally accepted academic norms, but also employ and foster the professional growth of instructors and researchers that are appropriate to the quality offering that the institution supplies (i.e. responds to the internal and external labor markets), and/or nurture a student community that is attractive to prospective entrants. The newly-adopted legislation provides several institutional antecedents for creating such a vibrant university-based academic community.

Firstly, all university rectors/presidents are to be elected by popular vote. Ballots cast by a university's academic staff (instructors/researchers whose primary place of employment is the institution) are weighted at 75% of the total vote; votes cast by students carry 15% weight; the votes of non-academic university employees carry a 10% weighting; to be elected a candidate must win 50%+1 of the weighted ballots either in the first round, or in a subsequent second round run-off in which the top 2 candidates from the first round take part (Article 43). Although the above rector selection system is complex, and certainly disadvantages «external» candidates (those who are not well known within the university community), the system of popular election of a university's chief executive is designed to strengthen institutional autonomy, and the academic community's direct involvement in managing university affairs¹.

¹ For more trends in higher education internationalization and institutional autonomy see Güla, H., Gülb, S.S., Kayab, E., Alican, A. (2010), pp.1878-1884.

Secondly, the powers of the rector/president are not absolute. The supreme policy-making body of a university is now to be chaired by an individual that need not be the rector (as was the case previously). The Law grants this body — traditionally still referred to in the Law as the «Academic Council» — managerial authority comparable to a Western university's Senate (e.g. approval of budgets and expenditure, drawing up the academic program, quality assurance procedures, hiring and promotion — Article 36). In extreme cases, the Academic Council can suggest that the rector be recalled by the academic community, and similar powers to propose a vote of confidence in the rector are granted by the Law to the Supervisory Board of the university — a body whose composition is defined in the statutes of each institution, and whose members may not be university employees (Article 38). With these provisions, those who framed the Law sought to insure that university autonomy would not degenerate into «uncontrolled executive autonomy», and to balance the powers of an institution's executive and policy-making branches through a system of checks and balances.

Thirdly, a vibrant university-based community requires strong student government. According to Article 41 of the Law, a university's student representative body must be consulted in all cases involving expulsion, appointments of deputy deans and vice rectors, management of dormitories, etc. Furthermore, quotas for student representatives are set out in the legislation for membership in the Academic Council (Article 36). Most importantly, because the university community (via the elected rector and Academic Council) is now deemed financially autonomous, with broad rights to manage the funds/property under its control (as long as transparency is ensured), students and the faculty may engage in entrepreneurial ventures under the auspices of the university — a fact that should lead to the creation of student cafes, bookstores, publishing houses, innovative firms, and business incubators which were previously legally impossible, but will now add vibrancy to those academic communities which demonstrate the required initiative for success.

The flip-side of the passage of Bill 1187-2 (now Ukraine's Law «On Higher Education») is that the country's overcrowded field of higher education institutions will be culled by a cruel and insensitive system of supply and demand. As with any autonomous institution, universities will now have to depend on solid management practices — including finding their unique mission and niche within the national educational market (as required by Article 27, Section 7). Furthermore, although university managers will

be forced to be more transparent in their decision-making, years of non-transparent practices (including tolerating plagiarism) by members of their academic communities will now become apparent and unpleasant staffing decisions will have to be made for the sake of an institution's academic reputation, and the «value» of its diploma. The paradigm of «reputation management» will require difficult decisions that only some university managers will be willing to make. However, the consequences of their (not) making such decisions will inevitably result in student demand and, therefore, in institutional survival in the medium term. At the same time, ICT development, internationalization of higher education and globalization of the labour market also bring many other challenges for universities managers¹.

Conclusion

The passage of Bill 1187-2 represents a momentous first step in instituting long-awaited fundamental reform of Ukraine's higher education system. Universities have been granted wide-ranging autonomy, and the powers of the Ministry of Education have been greatly reduced. Although the National Agency for Quality Assurance in Higher Education has been created, the shift towards «reputation management» as the key paradigm for ensuring the medium- and long-term prosperity of higher education institutions will present new challenges for the managers of universities. Those who manage to create and grow vibrant academic communities (involving both faculty and students) will achieve success. Those who do not will close.

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¹ See Warwick Philip (2014), pp. 91-103.