Global Summit Report

The Universities of the Future: Educational and Organisational Challenges

Barcelona, Catalonia, 20-21 April 2016

Presented by Dr. Josep Duart, Summit Head

Executive Summary

As part of the Universitat Oberta de Catalunya (UOC) Research Week 2016, UOC organised a global summit held in Barcelona, Spain, on 20-21 April 2016 entitled "The Universities of the Future: Educational and Organizational Challenges". The main aims of the global summit were to create a global network of researchers interested in the future of universities and debate and discuss the most important challenges facing universities from educational and organisational perspectives.

Twelve academics and researchers from Europe, North America and South America met in Barcelona to discuss and debate the tasks that universities currently need to face from educational and organizational perspectives, to respond to the opportunities that the digital economy is offering to post secondary institutions around the world. The analysis was centred around topics such as access, equality and inclusion in universities; curriculum development, teaching and quality; business models and sustainability; research, policy and practice; and linking universities, industries and graduate employment.

Academics and researchers agreed to formally establish and grow a global network for the discussion and application of policies and strategies that will have a direct impact on the shape and transformations that current universities need to have in order to respond to the new learners' needs and expectations. The aims and discussions of the network will be disseminated through a website, a report of the summit as well as the preparation of a special issue of a journal to share our view of the major challenges facing universities in the future. Future meetings will follow up on the work started at this summit.

Background and Aims

In the context of the new knowledge economy, several historical, economic, social and technological events (unprecedented demand, stagnant supply of relevant programs and courses, radical transformation of information technologies, gradual public sector decrease in education funding, and globalisation) have triggered a strong urgency for public and private education institutions to transform the way they create and deliver content, and respond to social and economic expectations. This provides universities with set of opportunities and challenges to address when facing an uncertain future. It is in the framework of these huge challenges for higher education in general, and for colleges and universities in particular, that the Universitat Oberta de Catalunya sought to bring together researchers and students to discuss and analyse paradigms for the universities of the future.

As part of the Universitat Oberta de Catalunya (UOC) Research Week, 18-22 April 2016, Dr. Josep Duart, from UOC faculty of Psychology and Educational Sciences, together with Dr. Martha Burkle, from Yukon College, Canada, and Dr. Michael Power, from Laval University in Quebec, organised a global summit held in Barcelona, Spain, on 20-21 April 2016 entitled "The Universities of the Future: Educational and Organizational Challenges". Activities of the summit included a variety of events to achieve it's aims and goals. These included the main research workshops, a round table on the future of universities and a doctoral student research seminar. Further details of these summit activities can be seen in Appendix A. The focus of these events was the creation of "university of the future" models for integrative, boundary-crossing and collaborative institutions within the wider context of:

- Current dual-mode university models and the evolution of university business models.
- Fostering truly trans-disciplinary teaching, learning, and knowledge creation.
- The role of information technology in the university of the future models.
- The role of a liberal arts education in the universities of the future.
- Management opportunities and challenges: new registration procedures for students, library access, interaction with instructors, etc.
- The problem of access to programmes and courses by geographically remote and non-traditional students.
- Access to higher education for students with disabilities.
- The workplace as an extension of the classroom: radical changes financial and organisational operations.
- Creating alliances with industry and non-profit organisations: future university entrepreneurship models.

In this two-day workshop, twelve academics and researchers from Europe, North America and South America discussed and debated the main challenges that universities are currently facing from educational and organizational perspectives such as access, equality and inclusion; curriculum development, teaching and quality; business models and sustainability; research, policy and practice; and linking universities, industries and graduate employment. The main aims of the global summit were to:

- Create a global network of researchers interested in the future of universities.
- Debate and discuss the main challenges facing universities from educational and organisational perspectives.
- Define strategies for network knowledge creation and dissemination.
- Acknowledge the work and provide feedback to PhD candidate students who are currently working their dissertations around the topics analysed in the summit

Summit Participants

- *Dr. Josep Duart*, Department of Education, Universitat Oberta de Catalunya, Spain (organiser and chair).
- *Dr. Martha Burkle*, Teaching and Learning Lab (TL^2), ITLC, Yukon College, Canada.
- *Dr. Eva Cendon*, Lifelong Learning, FernUniversitat, Hagen, Germany.
- *Dr. Elizabeth Charles*, Research Coordinator SALTISE, Dawson College, Montreal, Canada.
- *Prof. Mairead Dunne*, Director, Centre for International Education, School of Education and Social Work, University of Sussex, United Kingdom.
- *Dr. Alec Gershberg*, Chair, Urban Policy Analysis and Management, Milano School of International Affairs, Management, and Urban Policy. The New School, New York, United States.
- *Prof. Sarah Guri-Rosenblit*, Dean, Development and Technology, The Open University of Israel, Israel.
- *Dr. Carina Lion*, Director, Centre for the Innovation in Technology and Pedagogy (CITEP), University of Buenos Aires, Argentina.
- *Dr. Andrea Mangiatordi*, Research Fellow, Univerita degli Studi di Milano-Bicocca, Italy.
- *Prof Michael Power*, Educational Technology Professor, Faculty of Education, University of Laval, Quebec City, Canada.
- *Prof. Alan Tait*, Emeritus Professor of Distance Education and Development, The Open University, United Kingdom.
- *Dr. Uta Wehn*, Associate Prof of Water Innovation Studies, UNESCO-IHE Institute for Water Education, Delft, The Netherlands.
- **Rapporteurs**: *Elsa Corominas Rodríguez*, Managing Editor, International Journal of Educational Technology in Higher Education (ETHE), Universitat Oberta de Catalunya and *Greig Krull*, PhD Student, Universitat Oberta de Catalunya, Spain.

Structure of the Summit

The structure of the summit was divided into key sections of research and analysis that were led by two co-facilitators who presented an overview of the topic and lead the discussions and debates. The key areas were:

1. University Access and Models: Prof. Alan Tait and Dr. Andrea Mangiatordi
2. Curriculum Development, Teaching and Quality Frameworks: Prof. Sarah Guri-Rosenblit and Prof. Michael Power
3. Business Models and Sustainability: Dr. Uta When and Dr. Alec Gershberg
4. Research, Policy and Practice: Prof. Mairead Dunne and Dr. Elizabeth Charles
5. Linking Universities, Industry and Gradute Employment: Dr. Carina Lion, Dr. Eva Cendon

Session 1: Access and Models: Equality and Inclusion in Universities of the Future

UN Sustainable Development Goals

In September 2015, the United Nations (UN) agreed to 17 Sustainable Development Goals (SDGs) and 169 targets for the period 2015-2030. SDG4 aims "*To ensure inclusive and equitable quality education and promote lifelong learning opportunities for all*". This goal for the next 15 years has a particular focus on quality. For example, we have increased access to primary education exponentially, but children are coming out of primary education without the skills they need. Another focus of the goal

is around lifelong learning or post-secondary education. Sustainability is an issue that runs through most of the development goals. Sustainability in education in the past has focused on environmental issues. But we need to think more generally about sustainability in education, where sustainability is a core concept. We need to rethink our curricula so that sustainability is a key concern across the disciplines. Central to the notion of sustainability are safe, secure and resilient societies. This needs to shape our curricula.

The Scale of the Challenge: Expanding Access to Education

The scale of the challenge is sobering: Higher education places need to grow from 220 million to 460 million by 2030. This cannot be met by only building new campuses, so we need a combination of expanded campuses and flexible online learning as well. For continuing the aim towards universal primary education, we will need 25.7 million new primary teachers globally by 2030. These teachers will need training in universities. Furthermore primary education drives the demand for secondary education. We will still need further teacher numbers for secondary education following the achievement of Universal Primary Education (UPE). The scale is something we need to think about. Achieving this scale cannot be done through "business as usual", we will need to develop different approaches to meet this scale. The Europe 2020 participation targets for higher education are about 40% of the population. We need to think about what kind of system of higher education is needed. We need to think more about the higher education provision we need, and what sort of approaches to curricula are appropriate where higher education targets 50% participation. We need to change the current system that is focussed on the elite. We used to think that more provision was good, however greater provision is not enough. We also need to think about the kinds of provision - what was important for the elite years ago, is not important for the massification of higher education.

Reasons for Access: Social Justice and Improved Societies

There are two key reasons to expand access to higher education. The first reason is social justice. Higher education is a social good, a benefit to society. It should not be restricted to the elite, it should be for everybody and widely shared. This leads to a fairer share of goods in society. It also leads to improved life opportunities for more people and improved livelihoods (work for all is a core human concern). It also leads to self-fulfilment and respect. Education helps an individual to grow as a person, provides a badge of social status or respect (for good or for evil). The second reason to expand access to higher education is that it leads to a better functioning economy and society. It provides skills and knowledge for advanced economies, it leads to an educated citizenry for democracy and it leads to improved health and well-being.

Awareness of Arguments against Expanding Access

There are a number of perspectives that do not support wider access to education and we need to be aware of these. One perspective is that mass education means lower standards. For example, this was levelled at the Open University in the United Kingdom at the time it started, as the university did not have entry criteria (anyone could enter). In the United Kingdom, the number of universities have doubled in the last 40 years, so the argument goes that these universities and students must have lower standards. Another perspective is that there are not enough graduate jobs and graduate employment for all graduates. Data in the United Kingdom indicates that currently, graduates do find jobs, but it takes them longer than years ago. Another perspective is underemployment. This results from graduates working in non-graduate required jobs. It is a waste of resources for university study if graduates end up in non-graduate work. In the United Kingdom, students are promised that going to university leads to good employment, and that money borrowed for tuition can be earned back. For some students, that money may not be earned back. Another perspective is differentiation. This occurs by institution or by subject. Differentiation by institution refers to a hierarchy of universities. Employees and students may feel less status if they graduate from "lower" universities. "Elite" universities are very selective and often take a high proportion of students who arrive highly educated and cultured. In contrast, The Open University has different standards of excellence,

standards that aim for inclusion. Differentiation by subject can be between sought after subjects and those less sought after (for example engineering vs the humanities). Research in the United Kingdom shows that the earning power in classic professional subjects (such as law, medicine, engineering) far outstrips the earning power of humanities. Some graduates in humanities earn less at the age of 30 than those who did not go to university. Another perspective is that there is a wider need for different types of employees, for example, the need for more technicians and not graduates. The final perspective to consider is that university study is a personal private investment. Costs cannot be afforded except through full cost to students and loans. The state cannot afford it and it is personal private investment (if you want it, and you benefit from it, then you need to pay). Yet this does not consider the societal returns of the investment.

Expanding Access in Developing and Developed Countries

The need for growth is mostly in still developing countries. Growth in developed countries will still occur, but it has already expanded rapidly in the last 20 years. In developing countries, the modes of delivery and the history of education have tended to focus the understanding of what schooling and university education is. If you try to change the curricula and mode of delivery, it challenges the meaning of what schooling is, what higher education is, and it becomes a challenge of how to redefine higher education. Developing countries also face gaps in access, particularly in the use of technology and digital divides. There are challenges in developed countries as well. In developed countries, equitable access is easier to achieve in homogenous societies (for example Finland and South Korea). In more diverse countries it is not as easy. For example in the United States, black families whose heads graduated from university have 33% less wealth than white families whose heads dropped out of school.

Access and Financing Models

We need to think about different models of financing and the different needs of students. For example, if students go from school into university, or if working people come back into universities. Universities have different organisational and financing models, some have state subsidies while others do not, some institutions are private and some are public. Universities can also be affected by international agreements, for example, university models in the European Union have changed because of the Bologna process. There are different models of paying or not paying, or intermediate ways of payment etc. Higher Education in the United Kingdom is seen as a private benefit by the government, but higher education does provide a social benefit. Universities have both private returns to individual students and public returns to societies. Government policy also plays a major role in access. Even in countries where higher education is free, governments can still restrict access to higher education in other ways, which results in fewer graduates. University students also have different perceptions regarding financing. The value that students give to education can be different. For example, some students who have access to free education, the education is not seen as valuable, because they pay no money. This lower valuation leads to higher dropout rates.

Changes in University Delivery Models

Higher education needs to change, but there are different arguments for the ways in which it can change. The current university delivery models are traditional, online/distance, and dual mode institutions. There used to be a big difference between campus and distance teaching and learning. However, students now learn at home or in social groups and learning has become decentralised from campus based learning. What should the response be from universities? Should we think about flexible programmes for on/off campus based learning? What blended models should be used? There is no one model for the University of the Future – there are universities of the future – and each university has different futures. The challenge we face is to navigate between different trends. For example, massification vs diversification and competition vs collaboration. With massification, diversification also increases. We need flexibility in higher education systems, for example, we need

research universities, community colleges and open universities. But students should also be to move between institutions, according to their needs.

Accessibility and the Case for Universal Design

We tend to imagine an average university student and we provide the same education for each student for equality purposes. But sometimes the needs of students are not the same and we ignore issues of accessibility. As an illustration, imagine you are entering a running race... and you are given a pair of shoes to run in, but all the runners are all given one size (the average shoe size). An approach to expanding access is through Universal Design. Universal Design comes from architecture and has been applied to education and other fields. It is an inclusive approach, designing for accessibility for everyone from the start, rather than adapting education to be accessible afterwards. It aims to take every need into account. There is growing research evidence about its applicability and efficacy.

Universal Design for Learning

There are many frameworks with recommendations and guidelines for universal design in education. They mainly insist on (but are not limited to) the use of technology to enhance learning, because technology has the possibility to expand accessibility through assistive technologies. There are many difficulties to face on many levels, not only in terms of software, but also logistics, instructional design and university entrance. When considering applying universal design for education, we can consider the following questions:

- Is it easy to apply universal design? It is not easy, there are many levels to consider, but we need to develop a really inclusive culture (think about diversity, not only limited to disabilities, but also language and cultural differences). We need to start thinking about access from the beginning. For example, when we design materials we do spelling checks, but we do not check for accessibility issues.
- Is universal design possible? It is not possible to create something that is 100% accessible to all, yet we need to consider accessibility as a process, rather than a target. We need to adopt the right standards, and use flexible formats.
- Is universal design sustainable? It is difficult, but it is not an option to ignore it. The original concept of universal design is based on an economical perspective: it is more convenient to apply it, than not to. But universities do pose specific problems (e.g. very large and diverse student groups, the focus on the reuse of “traditional” instructional material).

We need to think about barriers for disabled students and how to overcome these. For example, in computer labs, curricula, educational software, instruction, libraries, registration options, science labs, student housing and residential life, websites, and other student services.

Design for Accessibility

For universities, there is a need to develop platforms and materials for students with different disabilities, but it can be expensive to develop and maintain. It is common to use technology to address the needs of the blind, for example, while other kinds of disabilities tend to be left out, such as mental disabilities. The word disability makes us think that they are the “other” or not ourselves, when they are all of us. Universal design allows the design for everyone. Students have different disabilities e.g. test anxiety. Some students find good coping mechanisms to perform well, but some do not. We need to think about students from different cultural backgrounds and starting points. Education occurs within a social-cultural environment, and we have not thought enough about values and design. There is a threat of stereotyping our students into groups. We need to consider accessibility issues from the start.

Accommodating Diversity and Difference

Disability fits within a larger category of difference. Universities need to be better at accommodating differences in students. Students can also have unseen differences or disabilities, for example students who have dyslexia taking university entrance exams on paper. We need to keep an open eye for all kinds of differences. More and more of our students who enter university, do so with low literacy and reading and maths skills. This affects the curricula and mode of delivery of university teaching. If we imagine the universities of the future to be on a different scale, and with different students, we need strategies to deal with students who need different levels of support. For example in the United Kingdom, the Open University has more students with disabilities than the rest of the university system, and had to develop ways to provide support for students who do not know how to learn. Student support is important for retention and reducing dropout. MOOCs have large dropout rates, in part due to a lack of student support. Diversity and difference does not only apply to students, but also affects who is in the university, for example staff, and the image of who are staff and students. This can relate to disabilities and even gender. We need to address the needs of faculty and learners and help them learn to learn at all different levels (school and higher education).

Key considerations for policy makers regarding access and inclusion:

- *Application of the UN Sustainable Development Goal 4: Ensure inclusive, equitable quality education and lifelong learning opportunities for all.*
- *Creation of awareness of global access to quality curriculum particularly for the development world*
- *Expanding access to universities requires a balancing of issues related to massification and diversification.*
- *University expansion of access is necessary for social justice and the improvement of societies.*
- *Universal Design for Learning can be used to improve accessibility.*
- *University curricula needs to be connected to students' potential employment capability*
- *New program development needs to take into account a "learn to learn" and life long learning strategy*

Session 2: Curriculum Development, Teaching and Quality Frameworks

Moving from a National Setting to a Global Landscape

We have seen that massification is a major issue in higher education. We have seen growth from 1 million students in higher education worldwide at the start of the 20th century to over 200 million in 2015. We have seen a massive increase from only 2-3% of the relevant age cohort participating in higher education to over 60% in some countries. We have also moved from operating mainly within national settings to a global landscape. Our challenge is how to provide quality higher education to large numbers of students at a reasonable cost. We need to harness the huge potential of digital technologies for the benefit of teaching, research and administration within higher education. A global landscape offers huge potential, but also poses great challenges. Universities can choose to work collaboratively with universities in other countries, or build campuses in other countries. There can be many problems to overcome or changes to make: related to different academic cultures, language barriers, potential students, appropriate curricula and programmes, type of educational systems, suitable student support, and quality assurance mechanisms.

The Case for Distance Universities

Distance universities provide access to huge numbers of students (most distance universities are the largest universities in their national higher education system) and so can provide economies-of-scale. John Daniel developed the Iron Triangle for distance universities balancing access, quality and costs. In distance universities, the curricula is developed by a small team of experts and teaching responsibilities are distributed. We need to be aware that distance education and e-learning are not the same thing. Most large scale distance universities do not provide their main delivery through e-learning. The provision of distance education varies globally. In some countries, there are no specific distance universities, as dual mode institutions serve both on campus and distance students. While in other countries, distance universities serve more students than traditional universities.

The Impact of the Digital Era on Distance Education

The incorporation of digital technologies has led to several benefits for distance universities, including interaction between students-teachers, and in-between students, access to libraries and remote resources and the possibility to update curricula on an ongoing basis. However, at the same time they created an identity crisis, by blurring the lines between distance and campus universities. For example, see Garrett (2016) The State of Open Universities in the Commonwealth: A Perspective on Performance, Competition and Innovation. Traditional campus universities can now provide distance teaching in many countries. Distance universities need to restructure the instructional and organizational infrastructures in moving from traditional distance to online. We need to reconsider the "iron triangle" in utilising digital technologies.

Massification and the Case for Dual-mode Universities

For traditional universities, it is contentious to compare mass airline transportation to education, but there are similarities in economies of scale and context. As with airlines, a distance education system only becomes cost-effective with quality when it can take advantage of economies of scale (Moore and Kersley, 2012). Currently, we have a huge logjam in providing access to the numbers of students who want access. A dual-mode university provides two modes of delivery: on-campus mode and online mode. There is convergence in modes and it can be very different to distinguish between online and blended model universities due to the different ways of delivery and online offerings.

The Importance of Faculty

Faculty are wary of massifying higher education, yet they need to prepare for the changes that future learning brings. A fundamental faculty fear is the replacement of teachers with robots. Many faculty feel under attack and disempowered within university decision-making. We need to understand the reasons for resistance before we try to affect change. Faculty are our main resource. Yet dual mode universities do not leverage their main resource for online learning. Currently regular faculty numbers are decreasing, but adjunct faculty numbers are increasing. It is a coping mechanism for dealing with increased access, but it is not a very efficient one. A major challenge is that regular faculty are not going online. There are several reasons for this. Many professor teaching styles are incompatible with online teaching and learning. Faculty can feel overwhelmed by increased interaction levels and extended online hours. If universities try to follow a single online mode (asynchronous), faculty tends to become overworked due to major changes in their work tasks/career.

The Blended Learning Design Model

Currently there are two separate visions for higher education. For faculty, the vision is to maintain quality and standards (continue a synchronous real time tradition). For administrators, the vision is to increase accessibility and enrolments (asynchronous delivery, less labour intensive). But what if we rethought this and considered a blended learning approach? This can be done with minimal training and minimal investment (thus increase efficiency and save money). We can help faculty transition

from classroom teaching and learning to online teaching and learning. A blended model or synchronous-mode teaching/learning relationship recreated online constitutes only a minor change in work tasks/career. Course delivery can occur through both synchronous and asynchronous modes, for example weekly synchronous seminars, with some online presence.

Co-design of Curricula

Curriculum development is not solely decided by faculty. Industry, social needs as well as school student needs are incorporated into curriculum design. Curriculum refers not only to the content but also the delivery of the content. We need to think about managing the different views of stakeholders in curriculum development and communicating with stakeholders. There is a range of stakeholders with legitimate intentions who will not always agree or align. We need to manage the tensions between academy, society (governments, employers, professional bodies, social activists), and students. We need to promote the co-design of curricula – creating the space and infrastructure to have the conversations between different stakeholders. It is a challenge to incorporate the feedback of multiple stakeholders. When moving into mass higher education, we need to move away from thinking of students as not knowing what they need to learn or needing to be told what they need to learn. We need to produce courses about what students want to learn, not only what faculty research is about. Universities often take very long to incorporate feedback from stakeholders, so employers simply design or build in-house universities to train their staff. Yet we need linkages in curriculum development with other stakeholders and knowledge producers. There are relationships between university and industry and government, however universities should not only seek to serve the needs of government and industry. Universities need to have a spirit of critical inquiry. But when paradigm shifts occur in industry, then universities have to respond. Universities can and do collaborate with industry leaders so that graduates can easily move into industry. One method to open our offerings and expand access is to provide other forms of credentials e.g. short courses. Universities can also work with industry to create joint programmes, relevant not just for one organisation but for an industry. We need to think of mechanisms to create the change needed in universities, one of those mechanisms is the space for critical inquiry and a reflection of the relevance of our curricula. For students coming back to university with work experience, we need recognition of prior learning. We need to open the curricula, and strategies for accreditation of prior learning. One strategy is the use of portfolios for older students coming back, for undergraduate and graduate programmes as well.

Universities as Knowledge Creators

We need to reconsider the role of the university as knowledge creator. Universities are not the sole creators of knowledge. Faculty are not the only knowledge holders. Yet university research plays an important role in society. The co-production of knowledge with students, industry partners, and society representatives is also important. Universities are known for producing scientific knowledge, yet there are different types of knowledge: practical knowledge, indigenous knowledge, tacit knowledge and codified knowledge. We need to think about how we transfer tacit knowledge in the classroom and how we can do so in an online environment.

Skills Development for Staff and Students

We need to equip our students for their livelihoods and their personal lives. This means they require not only knowledge, but also skills. Students need to exit universities with investigative and research skills, across all disciplines. A particular problem for students is leaving the school or university system and not having the support in a work environment that they had in education. We need to provide students with the skills needed to navigate the world. With regard to technology, students may know how to use digital technologies, but do not know how to learn with digital technologies. Skills development is not only important for students, but also for staff. Lecturers, to a large extent, do not get preparation for teaching. Faculty are trained more for research. More and more adjunct faculty are employed at universities and this creates a greater problem for how to ensure faculty

have the required skills for teaching. Regarding technology, lecturers only use a small part of the potential of digital technologies for learning. Lecturers need to be better prepared to exploit this potential.

Teaching and Research Careers

Teaching has always been subordinate to research at research universities, the reward system favours research and little discussion takes place around teaching. This is changing, for example, the United Kingdom now has a Teaching Excellence Framework and faculty have to adhere to these criteria. Faculty usually have freedom about what they are teach, but sometimes organisational structures make it difficult to change what and how is taught. There are many types of universities: research universities, open universities, community colleges, polytechnics etc. Established research universities will continue to focus on research. Other universities will do research as well, but focus more on teaching. Universities in the future may have different career options so that one aspect is not valued more than the other, for example specialist researchers, specialist teachers who do not research, and those who combine research and teaching. We need to develop new models of what a university teacher is, understanding how people learn is part of the responsibility of teachers. We also need to reconsider our understanding of teaching: do we pass on what we know or do we facilitate learning? Our challenge is to support faculty to improve their teaching and learning processes. We need to focus on being reflective practitioners, not teaching a static subject, but teaching a dynamic, moving subject.

Cross-disciplinary Models

We need to think about whether the disciplinary model still applies. Increasingly cross-disciplinary work and project-based learning are becoming more important. We also need to consider the organisational structure of universities. For example, many industries are moving towards to learning organisations whereas universities have tended to consolidate hierarchical structures. Sustainable development requires inter-disciplinary approaches. We need to teach students within a discipline, but also across disciplines (T shaped model with depth and width). We need to connect curricula across fields. With reductions in government funding, there is pressure to recruit undergraduate students in specific fields to ensure sustainability. There are reductions in student numbers in some settings, particularly in the humanities. We need to provide a range of disciplines.

Quality Matters

Quality is a key concern for faculty and for curricula development. In many institutions, lecturers do not want to move online because they think the quality is going to be lower. Quality needs to be looked at a granular level, not just at a national level or university level, but also at a departmental level. One aspect related to quality is the reviewing and improvements of curricula, through research results. Faculty can improve their teaching based on research. However the relationship between research and teaching needs to be considered carefully as research can inform teaching, but it does not always. Another aspect to quality is the accreditation and audits of curriculum development. These audits are currently the work of external accreditation institutions, and faculty/universities need to be aware of this. The focus on quality is even more evident when curricula development is in the hands of a team. Universities are moving towards centralized models of course redesign, where faculty work with instructional designers, multimedia teams, programmers, and faculty development advisors in course re-engineering processes.

Another aspect related to quality is the higher educational market. The influence of the market is different in different settings, yet a strong accountability measure is whether students get jobs and get good jobs. In some countries, there is a lot of competition among local institutions for students. Those that do not provide value to students, will not succeed. The current education system focuses rewards progression of good exam takers, not necessarily creative and critical thinkers. We need to think beyond the current system.

Key considerations for policy makers regarding curriculum development and teaching:

- *There is convergence in traditional, blended and online delivery models.*
- *The importance of co-production of curricula with relevant stakeholders: academics, industry, society.*
- *Improve curricula through combining cross-disciplinary approaches together with disciplinary knowledge.*
- *Focus on learning skills development for both staff and students.*
- *Include and apply quality measures for curricula development*
- *Achieving a balance in research and teaching, depending on institutional context.*
- *Use of technology is not longer an option and should be adopted in a critical and intelligent way*

Session 3: Business Modelling, Sustainability and Rankings

Rethinking the Business Models for Universities

There is clear call for change. A call for change for the removal of the ivory tower and movement away from the university being inward looking. The "business as usual" models are no longer an option. We have seen that our context is driving this through a) a strong need for higher education and lifelong learning for individual and societal gains; b) increasingly interdisciplinary and multi-stakeholder coproduction of knowledge; c) a world facing wicked problems such as climate change, population growth, urbanisation, economic growth difficulties, pollution; and d) more pervasive and more advanced Information and Communication Technologies (ICTs) in an increasingly digital world. ICTs are changing almost every sector of the economy, leading to changes in the nature of business. As the context is changing, we need to rethink what we are doing. We need to consider the future of the university. Is it a very bright future or is there a path to extinction?

Business Model Canvas

Before we can change our business models, we need to have a standard conceptualisation and understanding of what a business model is. Very often business models focus on revenue generation, or how value is captured. However we need to think about value creation, delivery and capture. Business models are not just about costs and revenues. The business model canvas provides a way for us to consider different dimensions:

- Customers – Groups of people or organisations whom we want to reach or serve.
- Value proposition – Collection of products and services which create value for specific segments of customers.
- Customer relationships – types of relationships developed and maintained with customers.
- Key activities – Important tasks which are undertaken to develop and maintain the business.
- Key resources – Most important assets which are necessary to run the business.
- Key partners – Network of suppliers and partners to whom activities are outsourced.
- Revenue – Income from customers.
- Channels – Communication with customers to deliver the value propositions.
- Costs – Costs to make the business run.

We need to think about these dimensions together so that the business model makes sense. We need to develop business models for universities in 2030. Summit participants were split into three groups to define business models using these dimensions. Please refer to Appendix B for the group models. A composite business model is then provided after the group models. Further work is

required on these models after the workshop. The next steps are to combine the business model ideas into concepts. These concepts can then be filtered and the value propositions can be linked to specific customer segments and revenue streams.

Key considerations for policy makers regarding business models and sustainability:

- *Universities need to be sensible to the global context which is driving challenges in financing and sustainability.*
- *Universities need to develop a new business model that will reflect incremental changes to provide better services to students and all stakeholders*
- *There is no single business model for universities, but many models of universities for the future as they answer to local and global needs and expectations.*
- *The new university business model starts with paying attention to the customer's needs and expectations*
- *To define a business model, consider value creation, delivery and capture.*
- *The new university business model should increase interdisciplinarity and multi stakeholder co-production of knowledge*
- *The Business Model Canvas includes the interplay of these different dimensions: key activities, key resources, value propositions, customer relationships, channels for curriculum development, revenue streams*

Session 4: Research and Policy

Research, Policy and Practice within Universities

If we think about a triangle between research, policy, and practice in universities, we can consider the relationships between 1) research and policy; 2) research and practice; and 3) policy and practice in future universities. These relationships occur within a context of sociality, economics, temporality and language. It is useful to consider these relationships further:

- Does research inform policy and practice? Or does policy / practice inform research?
- What kinds of research are conducted? Whose agenda is followed?
- What are the questions asked and the methodologies used?

Universities are modern institutions that focus on research and teaching (either producing or reproducing knowledge). They face demands for knowledge, service and impact. They are also affected by workplace and labour relations (short term contracts etc.). Universities work within local contexts and global contexts, with interconnections between them. Universities operate in local environments with particular local specificities – with particular stakeholders and participants. They have different sponsors or funders of research. Yet they also operate in a globalised context of convergence.

Policy Constrained Research

Our trajectory is policy constrained research and no longer research informed policy. Research data and interpretations are framed by policy agendas. Policy demands are for largely quantitative macro data that provide a global view. This data aggregates whole countries / groups that homogenises and decontextualizes and makes local social relations and effects invisible. In developing countries, there is a particular concern for being able to go to scale.

Methodologies, Substantives and Theory

Research findings tend to dominate research value. Funders want research findings that support particular interventions. This pushes the theoretical framing and methodologies into the background and produces theoretical stasis rather than development. As an example, we consider theories of gender in research, policy and practice. These theories are often informed by static binary gender

categories at a natural / cultural dead end, and normalise specific forms of femininities, masculinities, and gender relations. These relations are often re-constructed as natural, neutralised and globalised, and they are exclusionary as they occlude the conditions and experiences of many in their everyday. This leads to silencing the inequalities and exclusions that research is attempting to illuminate. Research uses explanations that re-assert / reinstate gender stereotypes that are universalised, used as the basis for policy or practice intervention. Yet we need to move away from implicit gender theories and re-theorise beyond binaries (male – female). We need to move from biology to social construction, from natural to learned and performative, from binary to inter-complexity, from sex to gender and sexuality, from categories to social relations, from outcomes to processes and from macro to everyday.

Design-based Implementation Research

The notions of methods and metaphors either constrain or inform research practice. Design-based implementation research (DBIR) has emerged in learning sciences for changing pedagogy or for using technologies in teaching and learning. Design is used as a metaphor is because design is iterative, there is constant improvement. DBIR works through mutual engagement and mutual positioning across multiple boundaries. Researchers and practitioners (communities of scholars) can work together. Design and iteration processes also question knowledge production. DBIR produces new knowledge, starting with the set of knowledge produced by traditional research (evidence based) practitioners, and bringing it into implementation and adaptation for co-design processes between researchers and practitioners. Out of that interaction, research emerges within a specific context. DBIR can be sensitive to local contexts and issues of alignment – i.e., accounting for institutional ecosystems and takes into account productive mutual adaptation of programmes to be implemented and sustained. It can play a role as mediating between micro and macro levels.

Communities of Researchers

For researchers, the individual model of research is dead. Researchers need to work in teams to solve problems. Researchers can research within an institution or work with national or international partners. Sustainability should be an area of research that needs to be addressed. Research can provide a voice to the unheard, a critical position of universities in societies. A greater focus for the future is more interdisciplinary research. This involves a community of researchers from relevant disciplines working together. An interdisciplinary approach may be especially useful for big societal problems.

Research Agendas and Priorities

In the future, universities will need to talk about their thematic priorities or research focuses. Universities may need to highlight strategic directions to be sustainable or specific interests for research. This will be a negotiated process with researchers (more top down than bottom up approach). Previously individual researchers may have been freer to identify their own research priorities. Research priorities can help clarify the questions that address big society problems. For example: a) Solving social problems such dealing with terrorist groups in democracy systems; b) Using systems thinking to improve education policy and solve more global issues; and c) Improving the social positions and mobility of our populations using ICT. There are two kinds of university research: theoretical knowledge or applied knowledge (transformation of society). The European agenda for research is set to applied or societal research. It is difficult to get funding for basic research. But the effort has to be made for basic research, we need the methodologies and theories to help solve applied problems. Applied research is not necessarily policy driven. There is a tension between researchers and policy makers, as policy makers will make policy whether the research results are ready or not, however if research is not well done it will not have the expected input into policy. Selection of research questions: In traditional research, if you cannot answer a question well, then you can ask a different question. Or spend a lifetime trying to answer that question. Whereas in the policy world, the question is set, and we need the best answers for this question. An important

consideration is how the university copes with the proliferation of knowledge and the stakeholders involved in knowledge creation. We need to consider the strategic issues of research in the future.

Methodologies for the Future

We require new kinds of methodologies to address complexity and multiple interactions. We also need more longitudinal studies and the use of technology for better data collection and analysis. If the methodology is not appropriate, then the research does not answer the question well or ends up answering a different question. For aspiring researchers, big data analytics should be part of the curriculum. More aspects of our lives will be digital and we want to look at how trends change over time. There are other fields that have been using data models to achieve richness in the data and we can use data to map out lifelong learning trajectories. It is one of the methods to be used. A problem with quantitative datasets is that you keep the same categories to compare longitudinally. We need the right methods to answer the fundamental question of what is going on in a particular situation or context. We need to look at wider methods for data collection. For example, citizen science in research is a new data stream coming in and we need to look at how we can embrace it. It is not only for observing the natural environment.

Funding for Research

Universities may or may not be able to fund more abstract, theoretical research. Universities themselves can internally fund some research. Other sources of funding include government, industries and charities. Academic crowdfunding may be a possibility generating funding for more radical or niche projects that do not meet normal funder criteria. A specific topic of research may not have much of a draw for funders. Does our research need to respond to funder needs? Funders often have particular ideas of the outcomes of the research they are looking for. Sometimes funders can censor research findings through choosing which findings to highlight, or want researchers to do research within a specific conceptual model framework. Part of the accountability of universities is the impact agenda. Universities have to show the impact of research, including as part of bid on policy or practice. If the impact on policy or practice cannot be shown, universities are reluctant to fund the research.

Research Findings and Rewards

There is a problem with the traditional rewards for research, they tend to favour traditional research methods, perspectives and publishing models. We need to adopt different perspectives. Yet if researchers do not use traditional methods, then they can be cut off from funders or career progression. Researchers are dependent on sources of funding. We also need to consider the role of gatekeepers – the reviewers of research and the perspectives they have. We have different possibilities and forms of research for the future and need to think about how to incorporate them. Dissemination of research is important (both commoditised and non-commoditised). We need shared, transparent and open publishing models for research. We need to consider forms of academic reward for different types of research. For example research that is either focused on developing theory, or applying theory in practice, or practical research. Another key issue is the articulation of research in lay terms. This is important for university accountability and buy in from society. Alternative rewards need to be developed for faculty for the popularisation of their research.

Key considerations for policy makers regarding research, policy and practice:

- *Research, policy and practice are linked and research is framed by policy.*
- *Universities need to negotiate their research priorities and how research is funded, incorporating industry and society research needs.*
- *We need to use different and applicable methodologies. Design-based implementation research is one method for educational research.*
- *We need to focus on both theoretical and applied (societal problems) research.*

- *Universities should design strategies and mechanisms be considered the best places to do industry R&D*
- *The role of research funders is changing and should be considered when planning the research goals and methodologies*

Session 5: Linking Universities, Industry and Graduate Employment

Graduate Skills and Competencies

When we consider graduate skills, we need to consider the wider context:

- How should we define workforce preparedness today?
- How should the focus be split between generalisation and specialisation?
- Is the gap between the university sector and the corporate sector significant?

There are many reasons for selecting a particular discipline to study. A major reason used to be job security. Students used to think that they would study a particular discipline for a lifetime career. Now students realise that career paths can change. The university still considers students to be homogenous (similar age groups, experiences, interests), but students are diverse. We also need to think further than a focus on disciplinary skills. Students require soft skills such as critical thinking, problem solving, networking, teamwork, flexibility and proactivity. Digital skills are also important. We have to think differently how to teach to these skills. For example, feedback from employers suggests that it is difficult for graduates to work in teams, be creative and solve problems. Universities require flexibility – in curricula, in teaching, and as universities. As an example of teaching problem solving in real contexts, the University of Buenos Aires created a simulation tool to link the academic world to the corporate world. The simulations are based on solving real problems and making decisions, based on information provided. Students are able to see how other students have decided.

Knowledge Societies and Universities

In Europe, there is a focus on knowledge based societies and a focus on knowledge workers and the proliferation of knowledge creators. Universities are not the only creators and producers of knowledge. There are also demographic changes in student profiles, as people keep returning to universities to continue with their studies or change careers. Yet there is also a decline in students entering university from school. Change and uncertainty are constant elements in the workplace today. It occurs within individual organisations and society as a whole. What do people need to deal with these changes? Universities need to be able to change and innovate, consider the levels of cooperation with corporations, and identify strategies to communicate and negotiate about needs.

Lifelong Learning and University Entry

We face a diversity of students: non-traditional students (adult or mature students) have increased, the notion of traditional students is disappearing. We have second chance learners (who come into university as a second chance), we have issues of equity groups and minorities. We have deferrers as well as recurrent learners (return for refreshing or retraining). We have returners (who start, leave and come back). We also have refreshers and learners in later life (at the end of their work careers). There are now more ways into universities. We need recognition of prior learning and experience for admission as well as recognition of prior learning for credit.

Work-based Learning and Other Forms of Cooperation

One linkage between universities and industry is through work-based learning, the integration of workplace learning into study programmes. There are different levels of involvement and forms of involvement (from specific modules to corporate programmes). We need to be permeable – open the linkages and communication between universities and corporations. Project-based learning is another opportunity to link universities and industry. There are many additional forms of cooperation currently between universities and industries. For example professional development for employees (such as in-service teachers), negotiated agendas with industry, collaborative ventures between universities and universities, industry-funded research, innovation hubs and internships/apprenticeships. Future forms of cooperation may widen further to consider training for jobs that do not exist yet, short-term certification, utilisation of retiree skills and multi-connected hubs.

We can consider a SWOT analysis of universities with regard to linkages with corporations:

- Strengths: Creating the worker, providing graduate skills and knowledge.
- Weaknesses: Universities move slowly and are filled with bureaucracy.
- Opportunities: Creation of hub of innovation, social transformation through innovation, and joint research opportunities.
- Threats: Limits in funding, different or competing interests, there is a threat of irrelevance if universities do not cooperate.

Skills Relevant for Employment

Using the T shaped model there are two axes to consider: vertical and horizontal. For the vertical axis, a depth of disciplinary knowledge is required. For the horizontal: interdisciplinary knowledge (with bordering disciplines) and relational / generic skills are required. These skills include critical thinking, problem setting, problem solving, timely delivery, creativity, presentation skills, and teamwork skills.

Key considerations for policy makers regarding universities, industry and graduate employment:

- *Graduates are being employed in increasingly knowledge-based societies. This means that universities need to focus in providing relevant curricula and skills for this framework*
- *Industry and university linkages need to be permeable and open.*
- *Policies need to be in place to promote industry and society presence in curricula development, research, and in every aspect of university activities*
- *The notion of the traditional student is disappearing, there are several different profiles of students with different needs. Policy development need to be sensible to this fact*
- *Graduates require soft skills as well as interdisciplinary knowledge.*
- *Information technology skills relevant to the work place need to be learn at universities across programs and courses*
- *Cultural sensibility and a global perspective needs to be taught across programs and courses*

Summit Outcomes and future work

At the end of the summit, participants agreed to formally establish and grow a global network for the discussion and application of policies and strategies that will have a direct impact on the shape and transformations that current universities need to have in order to respond to the digital learners' needs and expectations. This network will be expanded by linking to other initiatives interested in the future of universities.

The aims and discussions of the network will be disseminated through different channels:

1. A network website,
2. A written report of the summit,
3. A special issue of the Springer Open International Journal of Educational Technology in Higher Education, edit by summit organizer Dr. Josep Duart.

Participants agreed that the work and reflection on the challenges for the university of the future has only started with the Barcelona summit, and they are committed to follow up by making it an annual event. A final comment included that the network will grow to include missing participants from Asia and African countries.

Suggested Readings

Access and University Models

Burgstahler, S. E., & Cory, R. C. (2008). Universal design in higher education. *Universal design in higher education: From principles to practice*, 3-20.

Whitty, G., Hayton, A., & Tang, S. (2015). Who you know, what you know and knowing the ropes: a review of evidence about access to higher education institutions in England. *Review of Education*, *3*(1), 27-67.

Curriculum Development, Teaching and Quality

Guri-Rosenblit, S. (2014). Distance Education Systems and Institutions in the Online Era:An Identity Crisis. In Zawacki-Richter, O., & Anderson, T. (Eds.). *Online distance education: Towards a research agenda*. Athabasca University Press.

Power, T. M., & Morven-Gould, A. (2011). Head of gold, feet of clay: The online learning paradox. *The International Review of Research in Open and Distributed Learning*, *12*(2), 19-39.

Business model, sustainability

The Economist (2015). The world is going to university. Available: http://www.economist.com/news/leaders/21647285-more-and-more-money-being-spent-higher-education-too-little-known-about-whether-it

The Economist (2015). Top of the class. Available: http://www.economist.com/news/special-report/21646987-competition-among-universities-has-become-intense-and-international-top-class

The Economist (2015). Excellence v equity. Available: http://www.economist.com/news/special-report/21646985-american-model-higher-education-spreading-it-good-producing-excellence

King, G., & Sen, M. (2013). The troubled future of colleges and universities. *PS: Political Science & Politics*, *46*(01), 83-89.

Research, Policy and Practice

Dunne, M., King, R., & Ahrens, J. (2014). Applying to higher education: comparisons of independent and state schools. *Studies in Higher Education*, *39*(9), 1649-1667.

Penuel, W. R., Fishman, B. J., Cheng, B. H., & Sabelli, N. (2011). Organizing research and development at the intersection of learning, implementation, and design. *Educational Researcher*, *40*(7), 331-337.

Linking Universities, Industry and Graduate Employment

Bentley University (2014) An In-depth Look at Millennial Preparedness for Today's Workforce. Bentley University. Available: https://www.bentley.edu/files/prepared/1.29.2013_BentleyU_Whitepaper_Shareable.pdf

Lester, S., & Costley, C. (2010). Work-based learning at higher education level: Value, practice and critique. *Studies in Higher Education*, *35*(5), 561-575.

Appendix A: UOC Research Week Broader Activities

A global summit was held on the Future of Universities, as part of the Universitat Oberta de Catalunya (UOC) Research Week 2016, 18-22 April 2016. The main aim of the summit was to ascertain, lead and influence the global strategies for universities facing the challenges of the 21st Century, both in Europe and in North America. The broader goals for The Universities of the Future Summit were:

- Create and lead a global network of researchers in the exploration and creation of knowledge in the areas of online learning, distance learning, and organisational change. The creation of this new network will include members from different networks around the world.
- Debate and determine the main challenges that universities are currently facing from educational and organizational perspectives.
- Analyze and explore new models for programme and course sharing.
- Design and define strategies to support collaboration between participant universities and research networks.
- Design strategies for knowledge creation and dissemination related to the topics of the summit.

Four different events were organised to meet the broader goals of the summit:

Event 1: UOC Doctoral Candidate Workshop (18 April 2016)

The organisation of a meeting and knowledge exchange with doctoral candidates from the Universitat Oberta de Catalunya (UOC). A panel of experts met with UOC doctoral candidates, learned about their areas of research, shared academic expertise with them, and explored opportunities for further engagement and knowledge sharing. The panel consisted of:

- Martha Burkle, Knowledge and Learning Analytics, Information Technology and Learning Commons, Yukon College, Canada.
- Alec Gershberg, Chair of Urban Policy, Analysis and Management Programme, Milano School of Policy, The New School, United States.
- Michael Power, Professor, Faculty of Education, University of Laval, Canada.

Event 2: e-Learning Doctoral Candidate Research Seminar (20 April 2016)

The organisation of an open e-Learning Doctoral Candidate research seminar. Doctoral candidates in the field of e-Learning were invited to submit proposals for presentations. 12 candidates from different countries around the world presented their research, either in-person or online and received feedback from the expert academics and researchers involved in the summit research workshop. The research seminar was facilitated by Dr Josep Duart from Universitat Oberta de Catalunya.

Event 3: Research Workshop (20-21 April 2016)

The organisation of a two-day workshop for invited research participants. The purpose of the session was to debate the main topics leading the event, as well as the research projects each participant is involved in. A strong focus of the workshop was the creation of a network of experts. Discussions included strategies for linking research at participating universities and how the network could contribute to the advancement of knowledge on dual-mode universities, education for economic development, new university models, etc.

Event 4: Round Table on the Future of the University (22 April 2016)

A 2.5-hour round table consisting of a panel of experts debating and discussing issues related to the University of the Future. The panel was open to students, researchers and academics at the Universitat Oberta de Catalunya and other universities in Catalonia. The panel of experts consisted of:

- Marta Aymerich, Vice President for Strategic Planning and Research, Universitat Oberta de Catalunya, Spain. (Chairperson).
- Martha Burkle, Knowledge and Learning Analytics, Information Technology and Learning Commons, Yukon College, Canada.
- Alec Ian Gershberg, Chair of Urban Policy, Analysis and Management Programme, Milano School of Policy, The New School, United States.
- María Antonia Huertas, Professor, Faculty of Computer Science, Multimedia and Telecommunications, Universitat Oberta de Catalunya, Spain.
- Michael Power, Professor, Faculty of Education, University of Laval, Canada.
- David White, Head of Technology Enhanced Learning, University of the Arts London, United Kingdom.