

Martin Kropff, Rector Magnificus Wageningen University, 10 March 2014.

Slide 1

Ladies and gentlemen,

This year I would like to discuss the challenges we face in educating our next generation of students and the need to integrate our physical and virtual campus. Wageningen University is performing very well in education, being the no 1 university for education in the Netherlands for 9 years in a row in spite of a tremendous growth in national and international students. Numbers doubled since 2005. However, we live in a rapidly changing global environment and we have to define a sound strategy to educate our future students as successfully and effectively at an academic level.

I will start my presentation with showing you some of the challenges we are facing, mostly related to information technology, followed by some examples of Wageningen education that intensively use these new technologies. Then I will explain the latest phenomenon, the MOOC, and the influence of MOOCs and related developments on the educational system as was recently also discussed by our minister of Education. In the last part of my presentation I will present the contours of our vision on future education: the vision of an education ecosystem. We will further develop this vision, this year, in our Strategic Plan.

Slide 2 Demand education

The biggest challenge worldwide is formed by the enormous expected growth of higher education students from 100 million in 2000 to 400 million in 2030. In a traditional higher education system, this would mean

opening a large university each week. A large part of this growth takes place in emerging economies.

They will have a growing need for affordable access to top level education and life long. And, on a different scale, we also expect many more students to be interested in a Wageningen University degree. That will have far reaching consequences. We estimate to have more than 12000 students in 2018, almost 4000 more than we have now. And it might not stop there. We will need novel approaches to accommodate all these students and to provide them with high quality education.

Slide 3 students change

These students are changing too. They are used to easy and often free access to information, anytime, anywhere. The abundance of choices fosters “cherry picking”: Only the best possible option is good enough for me. They adopt a different learning style. Information access and transfer is not what makes an education institute attractive anymore. The main factor lies in an engaging and rich learning environment. An environment in which personal and professional development is facilitated and stimulated. At the same time we observe more diversity among students in what they know and are capable of.

Slide 4 society changes

Our education should also reflect the changes in our society. Our society is becoming more knowledge based. Secondly, we experience that the challenges in our domain of healthy food and living environment are becoming more and more complex. They are global and they require an interdisciplinary approach. And thirdly, learning and education will not be restricted to a few years at the university. Life Long Learning will be even more essential than today.

But the most striking change that will influence our educational system is the predominant role of information technology.

Slide 5 pope 2005

The developments in IT are far reaching and have a major impact on service chains. Here you see a picture of the moment where the new pope was announced in 2005

Slide 6 pope 2013

and here the same situation in 2013. It shows the explosion in the use of mobile phones for pictures and communication.

Slide 7 Examples WU IT education

Many of the IT developments can be used to improve the quality of education, to connect with the lifestyle of today's students, and to serve the many students of tomorrow. I would like to show you some nice examples of the way we already integrated IT in education in many forms and tools. We started this more than 25 years ago and today IT is an integral part of our education activities. We are using courseware, social media, clips, films, interactive tools, blackboard as frame etc.

Some concrete examples:

The first example is a multi-site course of the environmental policy chair with students from three universities. In Beijing, New York and Wageningen three different groups with 15 students each work together on a report commissioned by the UN commission for Sustainable Development.

The Chair Molecular Biology developed a virtual lab practical in plant sciences. This virtual practical prepares students for a complex practical with expensive materials. Students start with the virtual practical, where they have to act as student assistant as a teacher. A great didactic concept for better learning and cost saving as well.

Another example is the course on international Food Law. Students from Wageningen and the US communicate through an on line platform and have joint assignments. Likewise with Kiev in environmental sciences. The new developments require new didactic concepts and exams and quality control systems. Therefore we also conduct educational research on deep learning through digital support at the chair of Education and Competence studies.

Slide 8 future education

The growing influence of information technology on education has several consequences. The most important one is that education is no longer bound to time and space. At least partially. Students can watch lectures at any time and any place: in a plane, in bed and discuss in a forum with others across time zones. Also the content becomes available for many students, all over the world. A digital lecture can be watched by 10 but also by 10.000 students. And last but not least, IT leads to changes in business models and unbundling of service chains. We all observed the changes in the music industry where you can have digital access to music through itunes or spotify.

Slide 9 future education + MOOC

One of the newest phenomena in education based on these developments is the MOOC, the Massive Open Online Course

Slide 10 MOOCs

MOOCs are widely discussed, some believe they are a hype, but I think that they will irreversibly change the education landscape. It is exciting. I first came across the phenomenon last year when a young lady was sitting next to me in a plane to Vienna and she was following a Mooc from Harvard. She was taking a class of a respected professor and was really into it.

But I assume not everybody is fully aware of the concept MOOC. Let me briefly explain.

MOOCs are free online courses with lectures, documentation, questions etc. They are mostly delivered in fixed time slots of a few weeks. The subjects are mostly introductory and open for an unlimited number of participants, up to even 100.000 participants per course, all over the world. There are no entry requirements. In general, there is little or no direct or personal interaction with teachers. Students are not supervised or helped and assignments are only automatically corrected. But, there is much interaction between the participants in fora, discussion and working groups. They help each other and work together.

Sometimes, the institute provides in guidance, examinations, and certificates for additional fees. MOOCs are not yet leading to credits for a degree programme.

Slide 11 figures and facts

The first MOOCs started in 2012, but the phenomenon is expanding rapidly. There are over a 1000 MOOCs now, with more than 7 million

participants! More than 200 universities developed one or more MOOCs, many of them belonging to the global top universities

Slide 12 logo's universities

such as MIT and Harvard but also Leiden and Delft have successful MOOCs.

Slide 13 logo's universities + Wageningen

And Wageningen is on its way

Slide 14 effect MOOCs

The key question is of course: what will be the effect of MOOCs?

They are seen as an affordable and accessible way to offer knowledge to new global markets of learners. MOOCs will support the profiling of the top universities and fire up a growing competition between universities, focused on resources and global impact. Of course only a relatively small number of MOOCs in a specific domain can be successful. Universities that started use MOOCs to find and bind international talents. A University can select the best students that follow a MOOC and invite them to come to join or offer them a scholarship.

They will also lead to new forms of collaboration between universities: a university can license another university to use the MOOC, or can use a partner university as an educational hub to supervise and examine the local participants.

What we do not know yet is: how will students react? Will students go cherry picking and just follow courses such as we see in open universities or will they compile a programme with MOOCs from many different universities instead of a degree programme? And how will the

labour market react: will employers value MOOCs as higher education and what will be the effect on traditional grades?

The critics indicate that sometimes thousands start but only few finish, teaching staff may not be interested to explain MOOCs of others and the quality needs to be high for accreditation.

Slide 15 slide strategy

What would be the best strategy for Wageningen with respect to these developments building on our treasures? It is hard to foresee future developments but it is exciting and I believe we have an excellent starting position.

We have an excellent position in research and knowledge development, we are in the top 3 in our domain worldwide and our campus education is rated excellent in the higher education evaluation and appreciated by our students. We have a dedicated faculty and students, a small scale education system, focus on global challenges, quick feedback, we have international experience and we are well known for our Wageningen interdisciplinary approach and the concept of T shaped skills. And Information Technology is rooted in our campus education and it is being further developed in e-learning and distance learning.

Slide 16 Campus virtual physical

I am convinced that we have to integrate physical campus education with a well-developed system of virtual education into **one** learning ecosystem. A learning ecosystems where all components have their niche, are interconnected and where the whole is more than the sum of the parts. This learning ecosystem should be flexible, and able to react on the changes in student markets, student needs and societal challenges.

It will be built on our treasures, support our profile and position. Let me describe the concept.

Slide 17 Forum in WEE

In the heart of the education ecosystem we find the Wageningen Campus. It is the place where students and staff actually meet each other. In our philosophy, all **degree** students are expected to spend at least some time on the campus, many of them will be here for several years. It is the place for interaction: inspired lectures, practicals and lab sessions, discussions, working groups, summer schools and a place to meet fellow students, staff and business partners.

Slide 18 Forum en distance learning in WEE

In close connection with the campus we place the distance learning programmes. We are currently developing two MSc programmes (Plant Breeding and Nutritional Epidemiology and Public Health), starting in September 2015, also meant for **degree** students. They follow a full MSc programme through broadband internet and this set-up differs entirely from the MOOCs I told you about. The learning materials are specially made for them (special videoclips, texts, exercises, quizzes, virtual practicals) and they will be intensively supervised by lecturers and e-tutors. They work together in small groups and they will come to Wageningen for 6 weeks per year for 4 years (24 weeks in a full Master programme) to meet each other and the staff, and to do labwork and other practicals or group sessions. Another initiative is the joint program we are developing with NTU in Singapore. A top university that will develop a food sciences program with Wageningen.

Many materials of the distance learning groups can also be used in campus education, and the other way around. It is already visible that the

high demands on these materials are increasing the quality of our campus education too. The materials have to be so good that students can follow the program independent from a lecturer.

Slide 19 Forum, DL + MOOCs in WEE

Not every student can or will invest several years and a lot of money to get a degree. There will be many students interested in knowledge from Wageningen and we can offer them this knowledge in the form of a MOOC. We plan to deliver our first MOOC in September. We could start with using some of the material of the distance learning courses and assemble a MOOC. And we could develop new MOOCs in other areas. Important reasons to develop MOOCs are the easy dissemination of knowledge to large groups of students, especially in developing countries. But it is also important to keep our top position in our domain: others expect Wageningen to take position.

The last shell also represents the open educational resources in general. Here we also find the educational materials that are not offered or organized as a course but which are free to use through creative common licences. It will be unavoidable to publish our education materials in the form of open educational resources and we have examples already.

This whole of these three shells should form our learning ecosystem. Not as three separate shells but as **one** coherent system. Materials developed as a MOOC can become part of the campus programme in Wageningen or at another university, distance learning courses can be part of the Wageningen Academy programme and students from a

distance course can do a project together with the campus students. And we will support our staff in delivering their knowledge in all these forms.

Slide 20 Conclusions

Ladies and gentlemen, I would like to come to my conclusions:
Education is changing rapidly under the influence of Information Technology: it will become less bound to time and space. Large new markets are emerging and the system of Higher Education is likely to change, like what happened in the music industry. Competition between universities will increase. We must prepare ourselves for these changes but we have an excellent starting position, both in education, research and reputation worldwide. To keep our leading role, we should develop a coherent learning ecosystem integrating virtual and campus education. In doing so we must keep our quality standards at the current high level. . We will integrate the concept in our strategic plan. There is no time to waste, the future has already started.

Thank you for your attention