

10 Change of Education System – International Process seen by Experts, Teachers and Students

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10.1 Abstract.

Our society is more mobile. This influences also our education system. It brings more international communication and cooperation. Teachers and students must change their behavior. The speed of this change is different by area. Asia has a high change rate and United States and Europe has a too slow process for adaptation. The future of education is shown in this paper from 3 perspectives:

- Teachers
- Experts
- Students

10.2 Introduction

- Our society is more mobile than ever before. People expect, wherever and whenever they want to work, to learn and study. This has also an influence on students and teachers.
- Existing communication technology supports this change of behavior. It allows us to work everywhere. Mobile communication helps us to have contact with important data. Technology is cloud-based and support is decentralized.
- The world of work is increasingly collaborative. This changes how students work. There are more and more projects which can be national or international and may go out of the institution.
- Teachers must change due to mass of information. Fact oriented know how is no longer the only part of standard teaching.
- Teaching models draw more and more on online-, blended-and collaborative learning
- Teaching is more and more problem-based and active learning

10.3 International Change

Up to now there was a difference between OECD countries and countries with low-skilled and low wages inhabitants. Now we are at the point of a big change. The “West” cannot keep the low level countries out of their economy. In the last decade Americans and Europeans were responsible for development whilst production was made by low level countries in Asia. Many European countries and the US are stagnating. The key point of this change is education. Asian countries make massive investments in education. This can be seen already in the last OECD Pisa tests. In communist countries like China the elite is coming up. Ten percent of disadvantaged 15 years old scholars in Shanghai have better results in mathematics than the most privileged scholars in same age in the United States.

Similar results can be seen in the ranking lists of universities. China and India deliver students with high skills for moderate costs. Traditionally the the highest proportion of university Alumni were in US. However, during a silent revolution this is changing. China opens every week an institution for higher education China has also introduced the same university system like United States and Europe. This makes the education comparable.

In the upcoming period till 2030 the number of European and American Alumni will increase by 30%; but in China it will be 300%.

Another trend is, that the industry needs more and more natural science skills and young people in Europe or US are not interested in these subjects. Students in China and India like to study mathematics, engineering computing. These are the subjects which leads to innovation in technology.

“In 2013 40% of Chinese graduates completed their studies in a STERN (science, technology, engineering and maths) subject – more than twice the share of US graduates.

By 2030, China and India could account for more than 60% of the STERN graduates in major economies, compared with only 8% in Europe and 4% in the United States.” The change can be also seen in the investments. For example in eLearning the investments in Europe and United States are more than 3 times lower than in Asia. Also inside Europe a gap can be seen: Eastern Europe invests more than Western Europe. Same like in America: Latin America had a five years growth rate of 20% and North America just 4%.



e-Learning Growth reate by region: Worldwide-eLearning-Market, page 6
<http://www.ambientinsight.com/Resources/Documents/Ambient-Insight-2010-2015-Worldwide-eLearning-Market-Executive-Overview.pdf>

Africa gets some founding from international organizations, but it is not enough to catch up to international standards. By this generation – and maybe also next generation – Africa will be still on a low level.

Africa has more children in primary school, than ever before:

- out of 1000 children 118 die before 5 years

The international targets for 2060 are:

- 99 % broadband access
- 97 % literacy

This is a very low level too and just in 2060!

10.4 Future?

At the beginning there are general questions such as:

What will the future be like...?

How will life be different in the future?

The future – whatever we define in years – is

- far away
- always better than today and
- more.

Everything should be more, bigger and better than today.

Up to the 18th century science was focused just on the past, on history. Nowadays researchers also hold discussions about the future – like we are doing at this congress.

I looked at the future of education from 3 points of view: how it is envisaged by

- experts,
- teachers and
- students.

10.5 View of Experts

The key questions raised by experts are:

- Will we have more or less resources ?
- How will we gain revenue?
How much revenue?
- How will we see certificates?
What will be the value of a certificate?
- In line with the intellectual property: who owns the content?

- The teacher?
- The University?
- A platform?
- A company?
- Privacy – who owns the data?
- Student?
- Teacher?
- Platform?
- Will there still be Campus Teaching?
- Where are the competitors?
- Will we get a two-class education?
- Are students prisoners of the school?

Some answers from experts:

MOOCs (Massive open online course) will be a reaction to the new forms of communication. The new generation, the digital natives read short communication tools. They discussed questions first between themselves via platforms and later with the teacher.

Teenagers are growing up with different media. Their cultural technique is to work in a virtual reality like in real life.

Traditional education institutes will address more and more new target groups. When Stanford University introduced MOOCs in 2011, they got 160,000 students, but none of them came from Stanford itself.

Education institutes will have more cooperation. They will not develop every subject. They will have more cooperation and each will focus on a special subject which they can offer to others.

The education market in the future will bring open competition between

- different teaching methods,
- teaching approaches and
- communication channels.

In the year 2025 the experts expect that we will have a two-class education system.

On one hand, our society is evolving more and more into an economy-orientated system. This trend will also reach the education institutes.

On the other hand, we have more and more free access to information through the Internet. Why should people spend money on an Excel course if Youtube offers this for free?

The education market will be affected by both trends.

10.6 View of Teachers

Teachers are involved in the process. They are affected. Often they defend their own job.

A study was made by Daniel Tenger with the title "Future of Education", which is not yet published (Zürich 2014). He has set up the following theses:

- * There is a turning point in the development of education.
- * Technology has a disruptive potential.
- * Formation processes of brokering knowledge between learners and media influence.
- * Experts recognize these changes.

70 % of teachers envisage a scenario in the year 2025 which does not replace their jobs by machines. They underestimate the dynamics of the mechanization of education. Their interpretation is that technology brings a dehumanization of education.

Teachers foresee a divergence in the development between

- basic school and
- further education.

10.6.1 Mechanization of Education in Basic School

In basic education (compulsory education) teachers are still needed. There is an educational task. The children need personal support for acquiring basic skills. For this, discussion skills and role models are needed for perfecting social skills.

10.6.2 Mechanization of Education in Further Education

In the field of further education also for teachers themselves it is not sure that teachers are required. There is currently already competition between

- technical methods and
- human methods.

The pioneer in this field was language training. For 40 years language courses have been provided

- on TV
- on cassettes / DVDs / CDs

This does not mean that teachers will become jobless. Educators are needed to develop this content.

In the year 2025 teachers see front teaching and personal feedback no longer as a market advantage. Digital education data will provide a more precise feedback. 65% of teachers agree on this thesis.

Teachers have 4 suggestions for the future:

1. Modularisation

Courses will be distributed in smaller modules than before.

They can be booked individually. In the first phase of a new course there will be many "tasters" and just 10 percent will follow the course to the end.

2. Projectisation

Support will get more importance for

- mentoring and
- coaching

3. Networkisation

A change from

- supply of knowledge to
- "get to know"

is expected. The main target will be to establish contacts with like-minded students.

4. Enterprise Services

Not everything will be developed by every institution. There will be more taking-over of

- the organization and
- the training management

by other institutions.

10.7 View of Students

For this question, I used my students from the master program "Research and Innovation in Higher Education" at Danube University.

This is a very international group. 19 Students from 14 different countries (Bangladesh, China, Ethiopia, Germany, Indonesia, Korea, Mexico, Moldavia, Russia, Serbia, Turkey, UK, US, Vietnam). They are very high level students due to the fact that they were selected out of 400 applications. We can use their answers for the question "How young people see the future of education".

First of all, they categorize education institutes in 3 types:

1. traditional state-run institutions,
2. private institutions (both local and foreign institutions) and
3. joint-nation institutions.

Maybe some of their future perspectives are wishes for themselves because they are closer to the future. They will be affected more by the next years than older people like teachers or experts.

They envisage more practical application in education rather than theory. Practical experience will have an impact on theory.

Basically education institutions are more like market-orientated companies, they will compete more with each other to get more students, more funds and more academic fruits.

There will be an increasing number of education institutes and fewer students worldwide.

Technology will be the top priority of education. Every institution will specialize in certain areas.

The role of governments will change. Government will no longer favour only state-run schools. There will be an increasing competition. The governments will give more autonomy to public schools and they will no longer favour only state-run institutions. Schools will be allowed to have more business cooperation. Students today envisage professional managers for management positions, such as rectors, deans, etc. Professional managers will have an academic background or outsiders will come from firms. Private funding will play a more active role.

The education landscape is very different all over the world.
New technologies have different impact to education:

- in developed countries it is an additional tool
and
- in undeveloped areas it is a chance to reach more students.

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