Global changes in the world of higher education: Challenges and opportunities ahead
The good news...

The current and future environment is a “fertile land” for more and better higher education
The challenging news

... we don’t know how the current and future social, economic, political and technological shift will impact higher education (and its internationalization)

...and sometimes it looks like not too many people care about it
Towards an increasingly **interdependent** world
A new economy and society

Global
Highly Competitive
Technology driven
Constantly Changing
Knowledge Based

@fmarmole
A globalized economy

- Made in The Netherlands
- With ingredients from Morocco.
- Distributed by a Chinese company
- For sale in Delhi.

Mexican Salsa
Towards an increasingly fascinating world
Towards an increasingly interconnected world
Towards an increasingly turbulent world
“A new reality...
...to be seen with different lenses”
Why does it matter?

Sure glad the hole isn’t at our end.
Who told us that the university shouldn’t and can’t change?
A reality check...

- Limited employment growth
- Missed opportunity to spur growth and welfare
- Tension exacerbated by demographic and other social pressures
- The rise of “nationalism” and nativism as the opposite of internationalism
- Significant environmental concerns
- The challenge of disinformation, misinformation and malinformation
- Questioning about legitimacy of institutions
A reality check...

- Unimaginable progress
- Extreme poverty diminishing
- Unthinkable innovation and discoveries
- The world in the midst of the 4IR
- Higher Education: the best investment
# Economic returns by educational level and region*

<table>
<thead>
<tr>
<th>Region</th>
<th>Primary</th>
<th>Secondary</th>
<th>Tertiary</th>
<th>GDP/pc (PPP 2005)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>10.3</td>
<td>6.9</td>
<td><strong>16.8</strong></td>
<td>6,719</td>
<td>74</td>
</tr>
<tr>
<td>Middle East and North Africa</td>
<td>9.4</td>
<td>3.5</td>
<td>8.9</td>
<td>3,645</td>
<td>7</td>
</tr>
<tr>
<td>South Asia</td>
<td>9.6</td>
<td>6.3</td>
<td>18.4</td>
<td>2,626</td>
<td>4</td>
</tr>
<tr>
<td><strong>Eastern and Central Europe</strong></td>
<td><strong>8.3</strong></td>
<td><strong>4.0</strong></td>
<td><strong>10.1</strong></td>
<td><strong>6,630</strong></td>
<td><strong>7</strong></td>
</tr>
<tr>
<td>High Income Economies</td>
<td>4.8</td>
<td>5.3</td>
<td>11.0</td>
<td>31,748</td>
<td>6</td>
</tr>
<tr>
<td>East Asia and Pacific</td>
<td>11.0</td>
<td>6.3</td>
<td>15.4</td>
<td>5,980</td>
<td>6</td>
</tr>
<tr>
<td>Latin America and Caribbean</td>
<td>9.3</td>
<td>6.6</td>
<td>17.6</td>
<td>7,269</td>
<td>20</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>13.4</td>
<td>10.8</td>
<td>21.9</td>
<td>2,531</td>
<td>24</td>
</tr>
</tbody>
</table>

*Latest available year between 2000-2011*

However... returns are declining

...and even the ones having access to higher education, not always reap the benefits

The case of Angelo
And it is much more than just money
Higher Education as a key enabler of social development
Percentage of population that believes it is “absolutely important to live in a democracy,” by country and level of education

Education means a longer life. People who graduate from college live at least 5 years longer than people who don’t finish high school.

The NATION’S HEALTH
A PUBLICATION OF THE AMERICAN PUBLIC HEALTH ASSOCIATION
www.thenationshealth.org/sdoh
Higher education as the last place in the formal education system to build tolerance and “otherness” awareness
A renewed role for higher education:

Towards globally-minded and internationally abled, but locally-engaged citizens
A renewed role for higher education:

But also higher education institutions as role model local and global “corporate citizens”
A very different current (and future) context
Dynamics of globalization

New social challenges

The changing world of work

Transformation of childhood and families

ICT: The next generation
“Universities won’t survive...higher education is in deep crisis...The college campus won’t survive as a residential institution. Today’s [college] buildings are hopelessly unsuited and totally unneeded”

Peter Drucker, 1997

...or it has been just an exaggeration?
To begin with...

An increasingly complex sector

Significant expected growth, but...

A sector under a lot of pressure for a more effective response

Societies want solutions.
WB: Some key challenges in HE

- Biases towards "universities"
- Limited pathways allowing mobility
- Weak quality assurance
- Clear disparities in access
- Inadequate information guiding decisions
- Insufficient investment
- Weak engagement with community
- Limited institutional efficiency
- Limited adjustment of curriculum
- Weak connection with innovation agenda
What are the top issues in higher education in your region?

<table>
<thead>
<tr>
<th>Quality Assurance/Governance</th>
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</thead>
<tbody>
<tr>
<td>Employability of Graduates</td>
</tr>
<tr>
<td>Financing</td>
</tr>
<tr>
<td>Diversification of HE. Emphasis on TVET</td>
</tr>
<tr>
<td>Equity and Access, and Innovation</td>
</tr>
</tbody>
</table>
### What priorities will be emphasized in higher education in the next 5 years? *

<table>
<thead>
<tr>
<th>Priority</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridging gap between education and employment</td>
<td>76.9%</td>
</tr>
<tr>
<td>Funding models for TE</td>
<td>69.2%</td>
</tr>
<tr>
<td>Improving quality assurance</td>
<td>69.2%</td>
</tr>
<tr>
<td>Improving governance</td>
<td>69.2%</td>
</tr>
<tr>
<td>Role of the private sector in TE</td>
<td>61.5%</td>
</tr>
<tr>
<td>Equity and access to TE</td>
<td>53.8%</td>
</tr>
<tr>
<td>Developing capacity of TEIs in science and innovation</td>
<td>53.8%</td>
</tr>
<tr>
<td>Innovation in educational delivery models used by TEIs</td>
<td>46.2%</td>
</tr>
<tr>
<td>Articulation btw different types of TEIs and with...</td>
<td>38.5%</td>
</tr>
<tr>
<td>Non-university post-secondary sector</td>
<td>38.5%</td>
</tr>
<tr>
<td>Fostering internationalization</td>
<td>38.5%</td>
</tr>
<tr>
<td>Greater focus on TEIs versus governments</td>
<td>38.5%</td>
</tr>
<tr>
<td>Diversification in institutional mission of TEIs</td>
<td>15.4%</td>
</tr>
</tbody>
</table>

*Multiple responses*
What do we know?

And what we don’t know?
Key Trend 1: Uneven expansion
A fact...

Significant growth in higher education
More than ever more people are having access to higher education ...
Tertiary education gross enrollment ratio, by country income group. 1970-2015. %

Source: UIS database
The shifting distribution of the global stock of people with tertiary education

Global distribution of tertiary educated 25-34 y-olds in 2013 and 2030

2013:
- 137 million 25-34 year-olds with tertiary education
- China: 17%
- India: 14%
- United States: 14%
- Russian Federation: 10%
- Japan: 6%
- Indonesia: 4%
- Brazil: 4%
- Korea: 4%
- Germany: 2%
- France: 2%
- Turkey: 2%
- Saudi Arabia: 1%
- Argentina: 1%
- Poland: 2%
- Spain: 2%
- Other: 6%

2030:
- 300 million 25-34 year-olds with tertiary education
- China: 27%
- India: 23%
- United States: 8%
- Russia: 5%
- Indonesia: 5%
- Japan: 3%
- Brazil: 5%
- Germany: 2%
- France: 1%
- Spain: 1%
- Turkey: 2%
- Saudi Arabia: 3%
- Argentina: 5%
- Australia: 1%
- Italy: 1%
- Other: 6%
But, there is still a significant disparity in access

- Rural
- Women
- Poor
- Socially disadvantaged people
Percentage of 25-29 years old who have completed at least 4 years of tertiary education, by wealth.

Selected countries. 2008-2014

Source: GEM Report team analysis of household survey data.
Demographics is and will continue being a major driver in growth in tertiary education.

Tertiary education experiences and will continue experiencing tremendous growth and diversification.
Implications of the global growth in HE

Now the low and middle-income countries have the greatest share of the worldwide higher education enrollment.

It is in the developing economies where the future profile of global higher education will be defined.

Worldwide, higher education will transition from an elitist approach towards a flexible access model.
2025: Dramatic diversification of modalities/providers of education

- The role of technology
- Multinational universities
- The funding model
- Portability of credentials

Challenging the traditional assumption of what is higher education
Expanding HE beyond national boundaries

International branch campus facts

- **76** countries hosted international branch campuses in 2015 (10% higher than in 2011)
- **45%** Branch campuses under development worldwide being planned by U.S. and U.K.-based institutions
- **73%** Portion of total international branch campuses run by institutions in the U.S., U.K., France, Russia or Australia

Increased pressure for access to higher education.... but not for many years, and not everywhere
d. The aged share of the global population is rising, while the child share is falling.
Population Growth 2015-2050

Decreasing > 5%

Increasing > 40%

The case of Italy
For the first time in 28 years, a baby has been born in this Italian town.
The population of higher education students in Japan is forecast to decline by about a third over the next 15 years, from 650,000 students in 2018 to 480,000 in 2031.

Competition among universities has predictably increased as the applicant pool has begun to shrink and roughly 40% of the country’s private universities were operating below capacity as of 2014.

It is expected that by 2020, the average age in Croatia will be 44 yrs
In contrast...

Nearly a half of the population in Africa is under twenty
At present, 26 million Kenyans—more than half of the country’s population—is under the age of 25.

By 2030 two thirds of Kenyans are projected to fall into the under 25 cohort.

From 2015-2050, the total population in most of Europe will decrease by 5% while most of Africa will grow by more than 40% (World Bank, 2015).

By 2030, 42% of the youth globally will live in Africa.

Currently more than 70 percent of youth in Africa live on less than 2 U.S. dollars per day.
2025-2050: Brutal pressure for talent
A furious competition for talent

- **Australia**: 720,000 onshore enrolments by 2025
- **Canada**: 450,000 international students by 2022
- **France**: Increase international student intake by 20% (amounting to 470,000 based on current levels)
- **Germany**: 350,000 inbound internationally mobile students by 2020
- **Japan**: 300,000 international students by 2020
- **New Zealand**: 143,000 international students by 2025
- **Ireland**: 44,000 foreign students by 2019/20

*Source: British Council*
A furious competition for talent

Australia: 720,000 onshore enrolments by 2025
Canada: 450,000 international students by 2022
China: 500,000 international students by 2020
France: Increase international student intake by 20% (amounting to 470,000 based on current levels)
Germany: 350,000 inbound internationally mobile students by 2020
Japan: 300,000 international students by 2020
New Zealand: 143,000 international students by 2025
Taiwan: 58,000 foreign students by 2019
South Korea: 200,000 foreign students by 2023
Malaysia: 250,000 international students by 2025
Ireland: 44,000 foreign students by 2019/20

Source: British Council
However, it is a contested terrain

OUR STRATEGIC PLAN

1. GROW THE ENDOWMENT.
2. ATTRACT HIGH-ABILITY STUDENTS.
3. SUPPORT FACULTY AND STAFF EXCELLENCE.
4. BUILD A DIVERSE GLOBAL COMMUNITY.

Mike Luckovich
Globally, skills demand is shifting towards “New Economy Skills” (non-routine cognitive and interpersonal skills)

Employment Composition (simple cross country average by type of occupation (2000-2012)

OECD countries

Developing countries

Relative to other obstacles, skills have become a more severe constraint to business.

A mismatch of talent is challenging companies and countries alike, leading to a lack of prospects for families, missed innovation and a shortfall of growth.

200 million unemployed

That is the same as the entire population of Brazil.

Despite 33 million looking for a job in the US & Europe

8 million jobs are left vacant each year
Back to the Future...
Today’s children will face a labor market that:

- Will change rapidly, because of shifts in economic structure, technological progress, and increased globalization
- Will shift away from jobs that require unskilled (routine and manual) to skilled (non-routine cognitive) labor
- Will be comprised of jobs that do not exist today (4 in 5 elementary school students in developed economies will have a “new” job)
- Will require much higher job rotation
Key Trend 2: Limited efficiency
Timely retention

...a larger problem
Two key issues...

Significant number of drop-outs

Also, significant number of students not finishing on a timely manner
Completion Rates for Youth Ages 25-29 Years. *Latin America and the Caribbean.* 2012

Source: World Bank calculations based on SEDLAC.

Note: For each country, individuals ages 25–29 years who have ever started higher education are classified into three groups: those who completed their program, those who dropped out, and those who are still enrolled. Completion rates are estimated as the ratio between youths ages 25–29 years who completed a higher education program and the number of people ages 25–29 years who ever started a higher education program.
Key Trend 3:

Questioning about quality and relevance of tertiary education
The magic word: Accreditation
A mixed picture...
Accreditation as a major enabler of...

- Quality
- Recognition of value of higher education
- Competition among HEIs
- Sense of proud, recognition, prestige, status

Accountability and openness
Something intriguing about it

A “role model” which is here to stay.

An aspiration for institutions engaged in change.

A concept that has captured the imagination of parents, students, faculty members, stakeholders, companies and governments.

CAPTURING YOUR IMAGINATION
But, what role model?
Is accreditation an adequate proxy of good higher education institutions?

What?

Why?

How?
Towards the need for more diversified higher education systems

Biases towards “universities” as the only higher education option persist.

Pathways allowing mobility between technical and vocational institutions and universities are also very limited, if they exist at all.

Non WCUs as “second class” citizens
Unintended (or intended?) stratification in the educational system (and in society).

Selectivity for whom

A regressive funding approach
Are we moving in the right direction?

### De-investing in other subsectors

#### A simple (but wrong) recipe

- Reaffirming educational, social and economic stratification

#### Enabler or barrier?

- An asset or a liability?

#### Students:

- Publish (globally) or perish (locally)

#### Research:

- The madness of rankings

#### Quality or prestige:

- Attached to the world / detached from home

#### Public service:
Misleading facts and manipulating numbers?

A predatory and cannibalistic field?

About quality or about capacity to “sell” better?

A perverse incentive and rewards system

Brutal reallocation of internal funding and priorities just for the sake of improving the rankings

A distortion of the ultimate goals of tertiary education

Does the end justify the means no matter what?
On quality...and rankings
On Quality

Accreditation: Act of compliance or means for enhancement?

Quality as goal or as means?

Does quality respond to relevance needs? Do we know?

The tyranny of rankings
The share of Top 500 universities in the world of higher education

**NUMBER OF INSTITUTIONS**

- Total 500
- 500

**STUDENT ENROLLMENT**

- Global # TEI students
- Students in 500
Key Trend 4:

Institutional diversification
Diversification or fragmentation?
Towards the need for more diversified higher education systems

Biases towards “universities” as the only higher education option persist.

Pathways allowing mobility between technical and vocational institutions and universities are also very limited, if they exist at all.

Non ranked institutions as “second class” citizens
Key Trend 5:

The changing learning paradigm and the need for increased relevance
What are our students learning?
What are students learning?

*Bloom’s Taxonomy (Revised)*

Creating

Evaluating

Analyzing

Applying

Understanding

Remembering
+ Integrity
+ Reliability
+ Flexibility
+ Empathy
+ Creativity
+ Awareness of contemporary issues
Employers complain that workers don’t have the adequate skills.

Hypothesis: the labor market is demanding a combination of skills different to the ones that are being provided by the educational system.

10 key skills for future graduates

- Sense-making
- Social intelligence
- Novel & adaptive thinking
- Cross-cultural competency
- Computational thinking
- New media literacy
- Transdisciplinarity
- Design mindset
- Cognitive load management
- Virtual collaboration

Needed, a greater culture of evidence
Due to internationalization

Despite the internationalization

Independently of internationalization

Many times we don’t know
Key Trend 4:

The disruption of technology
Back to the Future...
Adoption of Technology in 50 million households worldwide

<table>
<thead>
<tr>
<th>Technology</th>
<th>Years Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone</td>
<td>74</td>
</tr>
<tr>
<td>Radio</td>
<td>38</td>
</tr>
<tr>
<td>P.C.</td>
<td>16</td>
</tr>
<tr>
<td>T.V.</td>
<td>13</td>
</tr>
<tr>
<td>WWW</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: ITU, 1999
Aunt Consuelo
Do you remember the Slide Rule?
bjsmith@admin1.gov

tjones@admin.acme
Our technology
He uses WiFi
Robotization: a reality

The stock of industrial robots in operation worldwide will rise 12% a year between 2014-2018

Sources: UniCredit Research, International Federation of Robotics

Bloomberg
Are the skills changing due to the ramifications of the IR 4.0?

1784-1840
4th Industrial Revolution (IR 4.0): What are we talking about?

A stage in the development of knowledge in which the lines between the physical, digital and biological spheres are being blurred.
Potential consequences

A full scale shift would add billions of dollars to the global economy in the next 15 years.

At least 5 million jobs in the 15 most industrialized countries would disappear.

It has the potential to increase global income and to improve life conditions of entire populations, but it would mostly benefit to those able to innovate and adapt.

It may increase inequality and income distribution, and it would entail all kinds of geopolitical Security dilemmas.
How many years until a machine can do our job better than us?

- Fold laundry
- Truck driver
- Retail salesperson
- Write a New York Times bestseller
- Putnam maths competition
- Surgeon
- Maths research
- High-level machine intelligence
- AI researcher
- Full automation of labour

Source: When Will AI Exceed Human Performance? Evidence from AI Experts
The Da Vinci Surgical Robot at Amrita Hospital has completed over 780 surgeries in multiple specialties in just 2 years.
What is the impact on education?

"You should check your e-mails more often. I fired you over three weeks ago."
A new type of students

Why does it matter?

@fmarmole

Email: fmarmolejo@worldbank.org
Different youth?

It is a beautiful day. I want you playing outside.
¿Sequential? Multi-task?

Which Media Young People Use

In a typical day, percentage of 8- to 18-year-olds who...

- Watch TV: 81%
- Listen to the radio: 74%
- Listen to a CD/tape/MP3: 68%
- Use a computer: 54%
- Go online: 47%
- Read a magazine: 47%
- Read a book: 46%
- Play console video games: 41%
- Watch videos/DVDs: 39%
- Play handheld video games: 35%
- Read a newspaper: 34%
- Watch prerecorded TV: 21%
- Go to a movie: 13%
I have a netbook, MP3 Players, flashdrive, IPAD… Dad, what did you use in school when you were student?

My brain!!
A possible future? Reality or science fiction?
Technological developments: Direct impact on education

- Virtual / Augmented / Mixed reality
- Adaptive learning
- Digital literacy
- Artificial Intelligence
- Unbundling
- Gaming
<table>
<thead>
<tr>
<th>General global trends</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognition of previous learning</td>
<td>Increased acceptance. NQF</td>
</tr>
<tr>
<td>Flexibility in academic subjects</td>
<td>General Education</td>
</tr>
<tr>
<td>Easier transition pathways between levels and institutions</td>
<td>Articulation arrangements</td>
</tr>
<tr>
<td>Competency-based portfolio</td>
<td>NQF</td>
</tr>
<tr>
<td>Blended teaching-learning</td>
<td>MOOCs</td>
</tr>
<tr>
<td>Experiential &amp; service learning</td>
<td>Co-Op programs</td>
</tr>
<tr>
<td>Internationalization</td>
<td>+ 2&lt;sup&gt;nd&lt;/sup&gt; language and increased student mobility</td>
</tr>
<tr>
<td></td>
<td>+ Internationalization “at home”</td>
</tr>
<tr>
<td>Academic workload</td>
<td>Significant “compression”</td>
</tr>
</tbody>
</table>
Governments must act..

...But national level changes are not sufficient...

... Higher Education Institutions need to embrace the change themselves.
Higher education is data rich, but information poor.
The Italian University in 1350

...and today’s universities
The art of ambiguity

Continuing doing the same, but waiting different results
Who is responsible?
“Higher education is the only business that holds a formal ceremony to get rid of its clients”

Elliot Masie, President - The Masie Center
A paradox

Higher education institutions are the best laboratory for social change

...but they have a tendency to inhibit their innovation capacity
A simple formula: More and better education
...but what type of education?
The professional of the future

- In the future, work will be based on the principle of "adjustment": intelligent individuals able to combine education, interests and skills in order to become a sort of unipersonal multifunctional team.

- Success will depend on the ability to "adjust": to creatively develop or modify skills and knowledge.
Graduates required in today’s world

- Able to work in teams
- Able to adapt to changing multicultural environments
- Global awareness and local consciousness
- Fluency in at least a second language
- Ability to communicate and to use ITC
- “Have learned to keep learning”

Technical Skills
Are we measuring learning properly?

FOR A FAIR SELECTION EVERYBODY HAS TO TAKE THE SAME EXAM: PLEASE CLimb THAT TREE.
The case of Malaysia

ICGPA: Integrated Cumulative Grade Point Average

1: Knowledge
2: Practical Skills & Psychomotor
3: Social Skills & Responsibility
4: Ethics & Values
5: Communication & Leadership
6: Problem solving & Scientific skills
7: Information Management & Lifelong Learning
8: Entrepreneurship & Management Skills
There is no magic formula...

- What it may work in one case

...it is not necessarily the best solution in other cases
Higher education does not always work as a system of connected actors. 

*Some disconnects*
Other Disconnects

Among higher education institutions

Inside higher education institutions
Some Elements for HEIs

- More international, but more locally connected and socially responsible.
- More collaborative (inside and outside)
- Less risk averse
- More flexible
- More innovative
- More entrepreneur
The importance of collaboration
Golden key: Everybody’s contribution could make a big difference

All the Windows are frozen again!
'The trouble with our times is that the future is not what it used to be'  
Paul Valéry
Francisco Marmolejo
Global Lead of Tertiary Education and Lead Education Specialist, India
The World Bank
Tel. +91-11-41479384

Email: fmarmolejo@worldbank.org
http://www.worldbank.org/education/tertiary

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