

# 3GU revisited

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# Part I: Revisiting the 3GU

# Confusion

- Many former Colleges of Higher Vocational Training have been renamed universities
- To distinguish themselves, some traditional universities now call themselves Research Universities
- Some universities that engage in entrepreneurship call themselves 'entrepreneurial universities'
- That is fine, but it takes a lot more to become a 3GU
- So, let's look at the historic perspective and then at the definition of a 3GU

# 1 GU: The medieval university

- First Western university in Bologna (1158)
- Faculties in theology, law, medicine and *artes*
- Loosely organised along individual teachers
- No research as we know it but interpretations of the antique scholars - ecclesiastical or worldly philosophers
- Latin as lingua franca → internationalisation
- Objectives: “enlightenment of the world and stimulation of obedience” → create good professionals like lawyers and doctors

## 2GU: Humboldt university

- Starting after Napoleonic times
- Research is the main task and education is integrated with it, so now 2 objectives
- Objective: to research everything under the sun
- Based on rationality, observation and transparency
- Research is mono-disciplinary. Increase of disciplines and ever further sub-specialisation, especially in the Artes faculties
- University become nationalistic; Latin disappears as lingua franca; inter-university mobility is hampered
- Create professionals (as before) and scientists

# 3<sup>rd</sup> Generation University – as of WWII

1. The basis is still fundamental research
2. Research is mainly transdisciplinary
3. Considerable cooperation with industry
4. Creating value becomes the third objective
5. Cosmopolitan university with English as *lingua franca*
6. Two-tier university: mass university with special arrangements for the best and brightest (staff and student)
7. Disentangled from the state: End of *direct* government contribution

This means there are only a few real 3GUs

# Let's recapitulate

	<i>Characteristics of the:</i>		
	<i>First Generation University</i>	<i>Second Generation University</i>	<i>Third Generation University</i>
<i>objective</i>	education	dito, plus research	dito, plus know how exploitation
<i>role</i>	defending the truth	discovering nature	creating value
<i>method</i>	scholastic	modern science, monodisciplinary	same, interdisciplinary
<i>creating</i>	professionals	dito, plus scientists	dito, plus entrepreneurs
<i>orientation</i>	universal	national	global
<i>language</i>	Latin	national languages	English
<i>organisation</i>	nationes, faculties, colleges	faculties	University Institutes
<i>management</i>	chancellor	(part time) academics	professional management

# Part II: The New Learning



# Learning

- Learning and teaching have remained essentially the same during the past millennia: “The sage on the stage” and the pupils making notes
- This is changing rapidly and we can identify three stages of learning / teaching
- These approaches to learning coincide, not surprisingly, to the three generations of universities
- But you don't have to be a 3GU to apply them – schools do
- Let's go through the stages

# Stage 1: Classical learning

- Direct interaction between teacher and students or small groups of students
- Some of the lectures are interactive, others are monologues
- There can be exercises: dissection tables, labs, field research in botany
- It was practiced in antiquity and the Middle Ages and it still comprises a good part of our learning system, especially in post-graduate courses

## Stage 2: Industrial learning

- With the Industrial Revolution came the need for mass education
- The six principles of industrial society were applied to education:
  1. Specialisation: the higher up the teaching ladder, the more specialised the courses
  2. Standardisation: courses, diplomas, students and teachers became standardised. Choice of a university became irrelevant
  3. Synchronisation: Education connects seamless to work with the diploma being the 'linking pin'. Diplomas are the communication tool between graduates and employers

# Industrial learning cont'nd

4. Concentration: schools and universities became ever larger until they have become true learning factories; exams have become likewise industrialised
5. Maximisation: Output of schools and institutes of higher learning was maximised, quantity as well as quality. Enter all kinds of (quality) measurement. Universities boast of their high 'production' of scientific papers, just like a car manufacturer boasts about the number of cars produced
6. Centralisation: In just about every country, the Ministry of Education sits at the top of the National Education System

# Disrupting trends – at the ‘supply-side’

1. Results of pedagogical research. Challenges:
  - a. Why year classes, rather than multi-age groups?
  - b. Why should a student be forced to repeat a year – and waste time and motivation - if only some subjects are below standard?
  - c. Why should pupils and students follow standard programmes? After all, neither students nor jobs are standard?
  - d. So, the trend is towards self-study, learning in small groups and individual tutoring

# ‘Phenomenon-based learning’ - Finland

2. ‘Phenomenon-based learning = students work on a project, either alone or in a team. Finland is building a completely new set of schools:
  - a) Classrooms with benches are replaced by ‘lounge-like islands’
  - b) ‘Classes’ with pupils of different age are smaller than 19 students
  - c) There are neither school inspectors nor teacher evaluations (an ombudsperson comes instead), school days are short and summer breaks lasts ten weeks
  - d) Students are being assessed by their teachers; there are no exams other than for those who want to continue learning, more of an entrance exam in fact

## 'Supply-side' trends cont'nd

3. Embedded' learning, getting assignments in industry or other employers while still at school or university.
4. Teachers still matter. A study of the University of Melbourne found that 'teacher expertise' is the most effective way in learning
5. Internet already has a vast impact. The popularity of MOOCs, a rather primitive way of learning, has taken great flight. On-line learning has great potential and this will be augmented by:
6. Artificial intelligence - still in its infancy but it holds vast promises

# 7. Brain research

1. New tools such as Neuropixels, a probe, 1 cm long and 70 microns across, is inserted into the brain and can read signals from groups of brain cells.
2. Much efforts go into the design of brain-computer interfaces, allowing persons with artificial limbs to move them by the power of thought, just like we do naturally
3. We know now that intellectual exercise, like learning a new language, is 'training' the brain like one can train a muscle



# 'Demand-side' trends - students

- New generations demand different work.
- Millennials seek challenges more than money, they want to work for a coach, not a boss, they want to substitute the annual job evaluation for ongoing discussion in which attention is given to strengths, not weaknesses
- Status does not interest them, many don't own a car. Millennials are twice as likely to invest in so-called responsible companies and are twice as likely to exit investments because of objectionable corporate activity as the average investor

# 'Demand-side' trends - employers

- Already for many years, HR practitioners advocate focus on human development. Instead of standard employees, employers need 'made-to-measure' personalities
- This means that the output exams and diplomas rapidly lose their significance. The current, bureaucratic procedures are being replaced by negotiations in which the employer brings in 'honest' job descriptions while the potential employee delivers a 'pitch' illuminating what he or she stands for, what educational pattern she has taken and what she is looking for

# ‘Demand-side’ trends - employers

- Finally, there is opposition against the notion that learning is just a matter of cost/benefit analysis.
- Courses are not only a purely financial investment. “Studying at universities should be a unique and transformational experience, challenge your principles, take you out of your comfort zone”

# Elements of the New Learning

1. “No lectures, no classrooms, no majors, no departments” – Christine Ortiz at MIT. “Rise of the challenge-driven university” rather than coercion-driven education – Geoff Mulgan
2. Teaching becomes a succession of team-projects and individual learning projects with increasing complexity (‘levels’, as in games)
3. Students will choose such courses by matching their chances in the job market with their interests. They might take quite unorthodox combinations, such as mixing Mandarin and philosophy with a course in physics
4. Contacts with all kinds of employers start at day one

# Elements of the New Learning cont'nd

5. Teachers become coaches rather than orators.  
Teaching becomes a high-standard profession
6. Institutes of Advanced Learning at major universities
7. Students learn to pitch what they have learned and what they seek in employment
8. End of overspecialisation – knowing more and more about less and less – A.D. Lindsay of Oxford
9. Students are in charge of education, not the 'system'. This means a devolution of the National Education System; let students and teachers decide what and how to learn, top-down design of courses is contra-productive

# Elements of the New Learning cont'nd

10. Output exams and diplomas become just a festive celebration of the completion of an education.
11. The emphasis shifts to input exams. The world's top universities already apply this, requiring not only a good school diploma but engaging in a series of interviews with potential students
12. Back to education as a transformational experience. Students will be encouraged to engage in all kinds of social activities, urged to do so by potential employers