

The Sustainable Development Goals for Education: Issues for Curriculum, Labour Markets and Assessment

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**Seminar, Ministry of Education:
February 28th, 2020**

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Outline

- ◆ The Sustainable Development Goals
- ◆ Sustainable Educational Development (SED) and Education for Sustainable Development (ESD)
- ◆ Changing Patterns of Employments and Skills
- ◆ Curriculum Issues
- ◆ High Stakes Assessment
- ◆ Ways Forward

The Key Questions

Sustainable Educational Development (SED) and Education for Sustainable Development(ESD)

On Sustainable Educational Development (SED)

- How can education systems be **planned** to make SED possible?
- How should **infrastructure for learning** change to support SED
- Is the **national and international architecture** for SED fit for purpose?
- How can SED be **financed and will privatisation** promote SED?

On Education for Sustainable Development (ESD)

- What changes in **curriculum aims and learning objectives** are needed for ESD?
- What new **learning and teaching methods** are needed for ESD?
- How can **high stakes assessment** be reformed to encourage ESD?
- **How should higher education + teacher education evolve to support ESD?**
- How can ESD promote learning outcomes that **values the future over the present?**

The Sustainable Development Goals



Infographic of the week

September 25, 2015 by [GPE Secretariat](#) | [Twitter](#) [Facebook](#) [Google+](#) [Star](#) [Share](#)



What is Sustainable Development?

- Valuing the future over the present and sacrificing satisfaction *now*, for satisfaction in the *future*?
- Ensuring that technological innovation, increases in productivity, and food production exceed the rate of population growth?
- Preserving biodiversity and nurturing a healthy planet
- Minimising energy consumption or maximising clean energy?
- More or less? – equality, equity, freedoms, competition, employment, health, children, privatization, leisure?

Sustainable Development Topics



Africa



Atmosphere



Biodiversity and ecosystems



Capacity-building



Chemicals and waste



Climate change



Desertification, land degradation and drought



Disaster risk reduction



Education



Employment, decent work for all and social protection



Energy



Finance



Food security and nutrition and sustainable agriculture



Forests



Gender equality and women's empowerment



Green economy



Health and population



Indicators



Industry



Information for integrated Decision-Making & Participation



Institutional Frameworks and international cooperation for Sustainable Development



Mountains



Multi-stakeholder partnerships



National Sustainable Development Strategies (NSDS)



Oceans & Seas



Poverty eradication



Rural Development



Science



Small Island Developing States



Sustainable cities and human settlements



Sustainable consumption and production



Sustainable tourism



Sustainable transport



Technology



Trade



Water and sanitation

**What is important for
Sustainable Educational Development ?
ESD**

**What is important for
Education for Sustainable Development?
SED**

Sustainable Educational Development (SED)

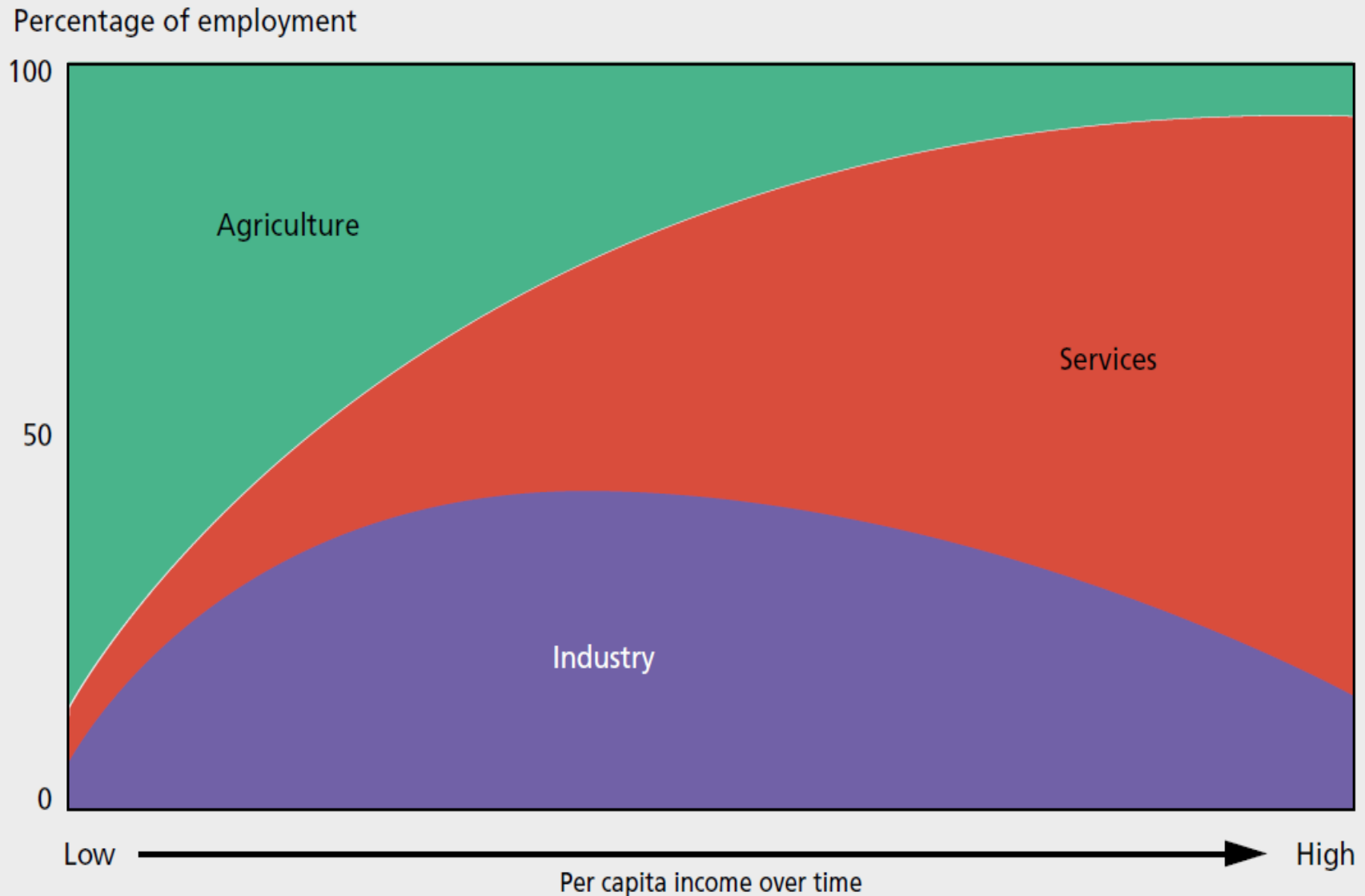
- **Equitable opportunities to learn for all boys and girls** and young adults independent of household wealth and other inequalities
- Adequate **investment in the infrastructure to support learning** – books, buildings, equipment, information technology
- **Energy and ecologically friendly educational planning** e.g. school location, school choice, student mobility - to minimise impact on the environment
- Recruitment, training and employment **of qualified and trained teachers with sustained continuing professional development**
- **Educational financing** without dependence on external financing or exclusions by price

Education for Sustainable Development (ESD)

- **Curriculum innovation** to promote understanding of geological and biological ecosystems and the limits to growth on planet earth
- Pedagogical reform to **transform values and awareness of consumption and investment choices**
- Promotion of **responsible national and global citizenship** and peaceful coexistence that links rights to responsibilities and actions to accountabilities
- Understanding that **technological innovation and “green growth”** are essential for sustainable development
- Acting to **value the future over the present**; this means managing present consumption to preserve well being in the *future*

Changing Patterns of Employment and Employable Skills

Percentage of Employment and Per Capita Income



Changing Patterns of Demand

Figure 19. How demand for skills has changed in recent decades



Source: World Economic Forum (2016). US Department of Labor data; changes in the share of jobs from 1980 to 2012.^{v14} Note: The position of an occupation on the x and y axes reflects the intensity of math and social skills required.

Industry, Services and and Employment 4.0

Industry 4.0

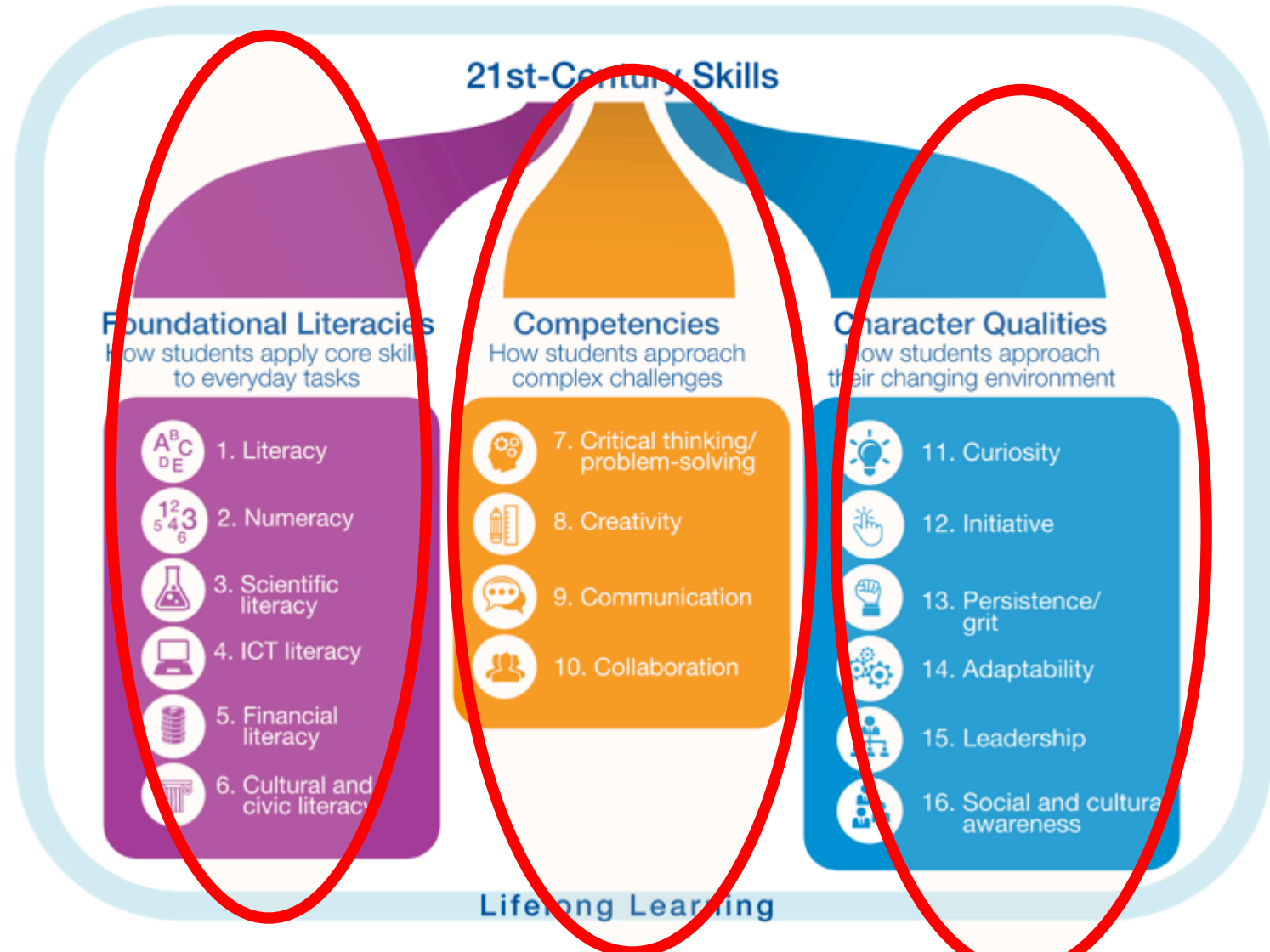
impacts on employment, livelihoods and wellbeing?

- Is the past is the best guide to the future?
- 1981 IBM PC 16 KB, 1983 Mobile phone, 1989 Internet, 1991 Webpage, 1994 Amazon, 1998 Google, 2004 Facebook, 2007 Iphone, 2008 Android phone
- FANGs now account for \$1.5 trillion revenue = 20 x Sri Lanka's GDP!
- The nature of work is being transformed and factor costs are changing
- Artificial Intelligence + robots replacing labour in production and services
- Global citizens are not the same as disenfranchised global workers
- Behavioural prediction is a new kind of capital embodied in big data (Zuboff)?
- Will later developing countries resemble early developers or are there late development effects that make their pathways different?

21st Century Skills

World Economic Forum 2015

Exhibit 2: Students require 16 skills for the 21st century



DEEP LEARNING COMPETENCIES

The Deep Learning Competencies, better known as the 6 C's, are the skill sets each and every student needs to achieve and excel in, in order to flourish in today's complex world. These competencies form the foundation for the New Measures and NPDL teachers use the [Deep Learning Progressions](#) to assess students' current levels in each of the six Deep Learning Competencies. They combine this with information about student achievement, interests, and aspirations to get a clear understanding of what each student needs to learn.

[→ Learn More](#)



COLLABORATION



CREATIVITY



CRITICAL THINKING



CITIZENSHIP



CHARACTER



COMMUNICATION

6 P's?

Problem solving
Persistence
Personality
Perspective
Probity
Passion

6 ABC's

Awareness
Benevolence
Critical thinking
Diligence
Emotional intelligence
Flexibility


Singapore – 5 Cs

1. Cash
2. Car
3. Credit card
4. Condominium
5. Country Club

Curriculum and Education for Sustainable Development

National Curriculum - Malaysia

Compulsory and elective subjects

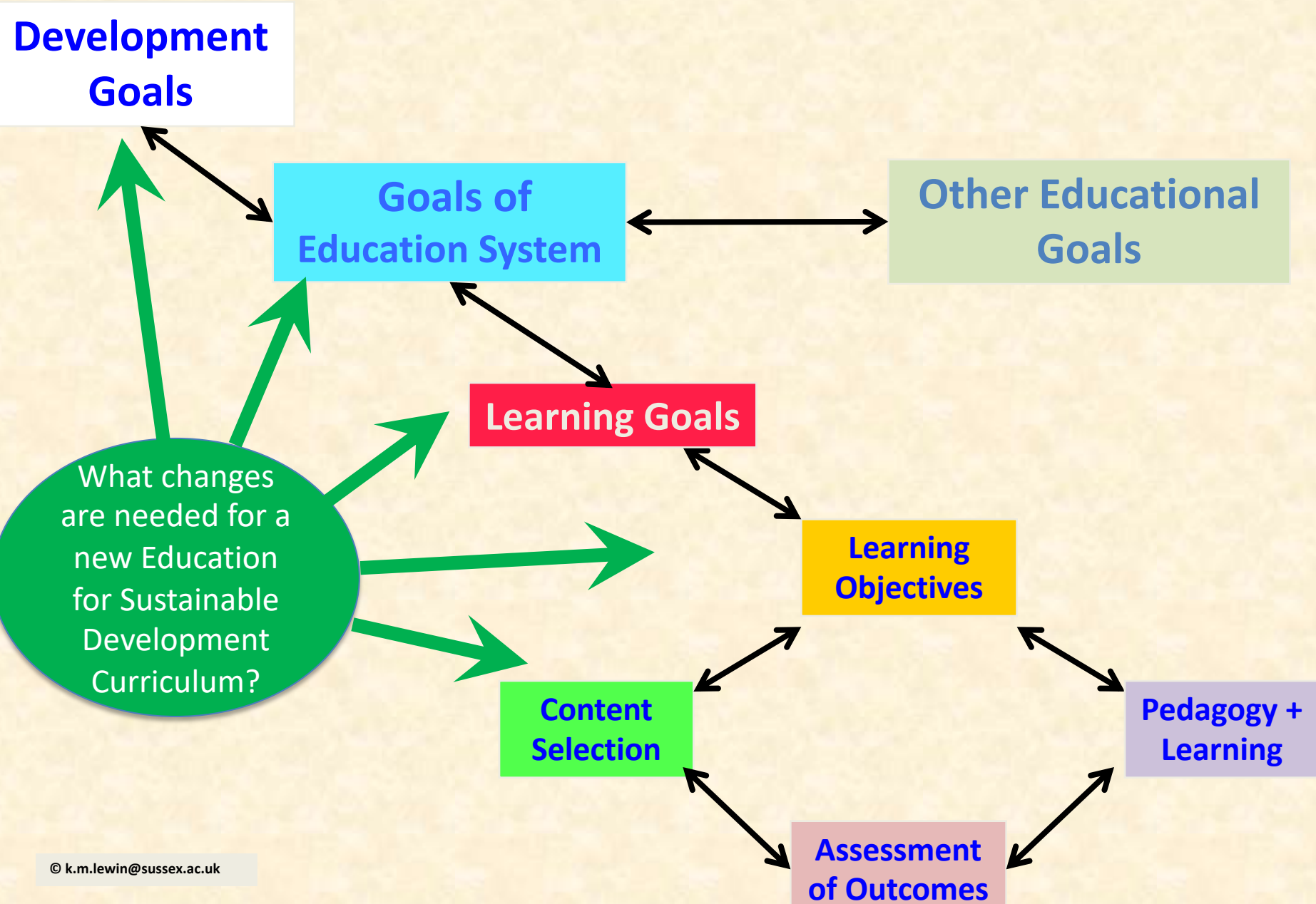
 Subjects that must be assessed in the UPSR, PMR and SPM examinations

	Primary (KSSR)	Lower secondary (KBSM)	Upper secondary (KBSM)
Compulsory	<ul style="list-style-type: none"> Bahasa Malaysia English language Chinese language (SJK) Tamil (SJK) Mathematics World of science and technology Islamic education Moral education Physical education Health education World of music World of visual arts 	<ul style="list-style-type: none"> Bahasa Malaysia English language Mathematics Science Islamic education Moral education History Geography Living skills Civics and citizenship Music education Physical education Health education 	<ul style="list-style-type: none"> Bahasa Malaysia English language Mathematics Islamic education Moral education History General Science (for Art stream students) or Biology, Chemistry and Physics (for Science stream students) Music education Physical education Health education
Elective	<ul style="list-style-type: none"> Arabic Chinese language (SK) Tamil (SK) Iban language Kadazan-dusun language 	<ul style="list-style-type: none"> Arabic Chinese language Tamil Iban language Kadazan-dusun language 	<p>92 subjects available in the academic, vocational and technical streams including:</p> <ul style="list-style-type: none"> Arts Information technology Languages and literature Science and Mathematics Social Sciences Vocational and technical

Common Board Curriculum - India

Sl	Subject	Number of periods for theory classes	Number of periods for activity classes	Total Number of periods
1	Language-I	6	01	7
2	Language-II	5	01	6
3	Mathematics	6	01(Maths Lab)	7
4	Science	6	02(Lab)	8
5	Social Sciences	7	01	8
6	Work Education	----	2	2
7	Art Education	-----	2	2
8	Physical and Health Education	-----	3	3
9	Co-Curricular Activities	-----	2	2
10	Life Skills*	-----	1	1
11	Values Education and Gender Sensitivity*	-----	1	1
12	Library	-----	1	1
Total				48

Learning Goals and Curriculum in (Open) Systems



High Stakes Assessment and Sustainable Educational Development

Inequalities
in income
and
wellbeing

Inequalities
in access to
education

Inequalities
in access to
jobs

High Stakes Assessment and Education as a Positional Good

Intense demand for
schooling and certificates

Examination orientated learning
and teaching

Ritualisation of learning
and assessment

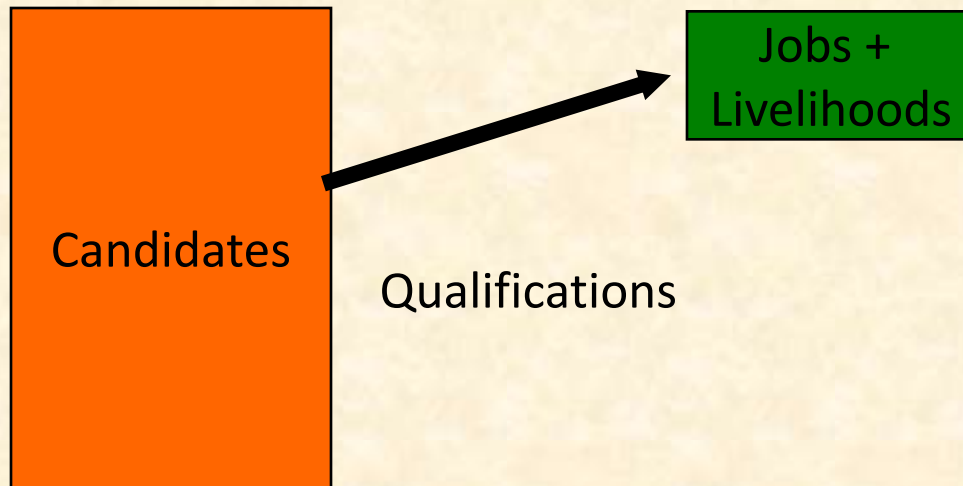
Overemphasis on the examinable
e.g. recall and recognition

Underdevelopment of cognition and
creativity of the successful

Demotivation and alienation
of the unsuccessful

The Diploma Disease"

High Selection Ratio



Hope or
Despair?



Subject Value
For Selection

Difficult

Maths

English

Science

Language

Geography

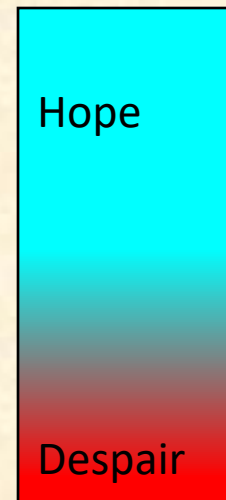
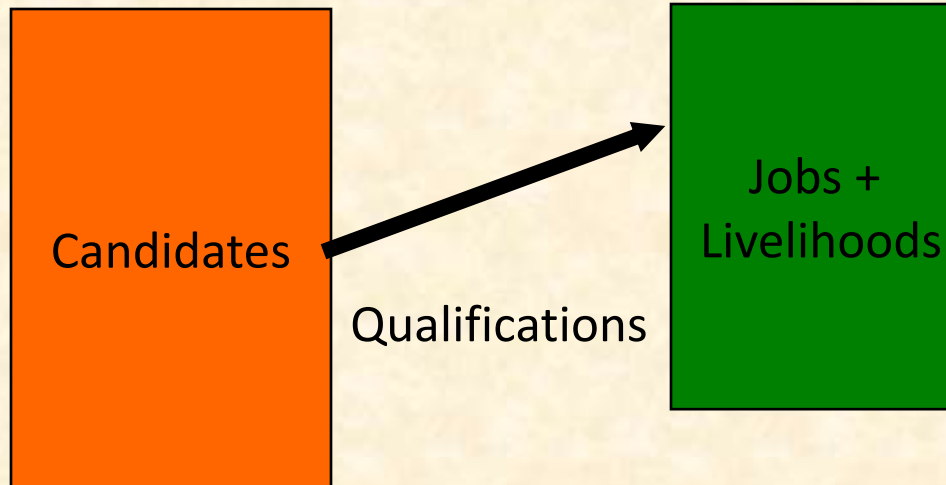
History

Citizenship

Life skills

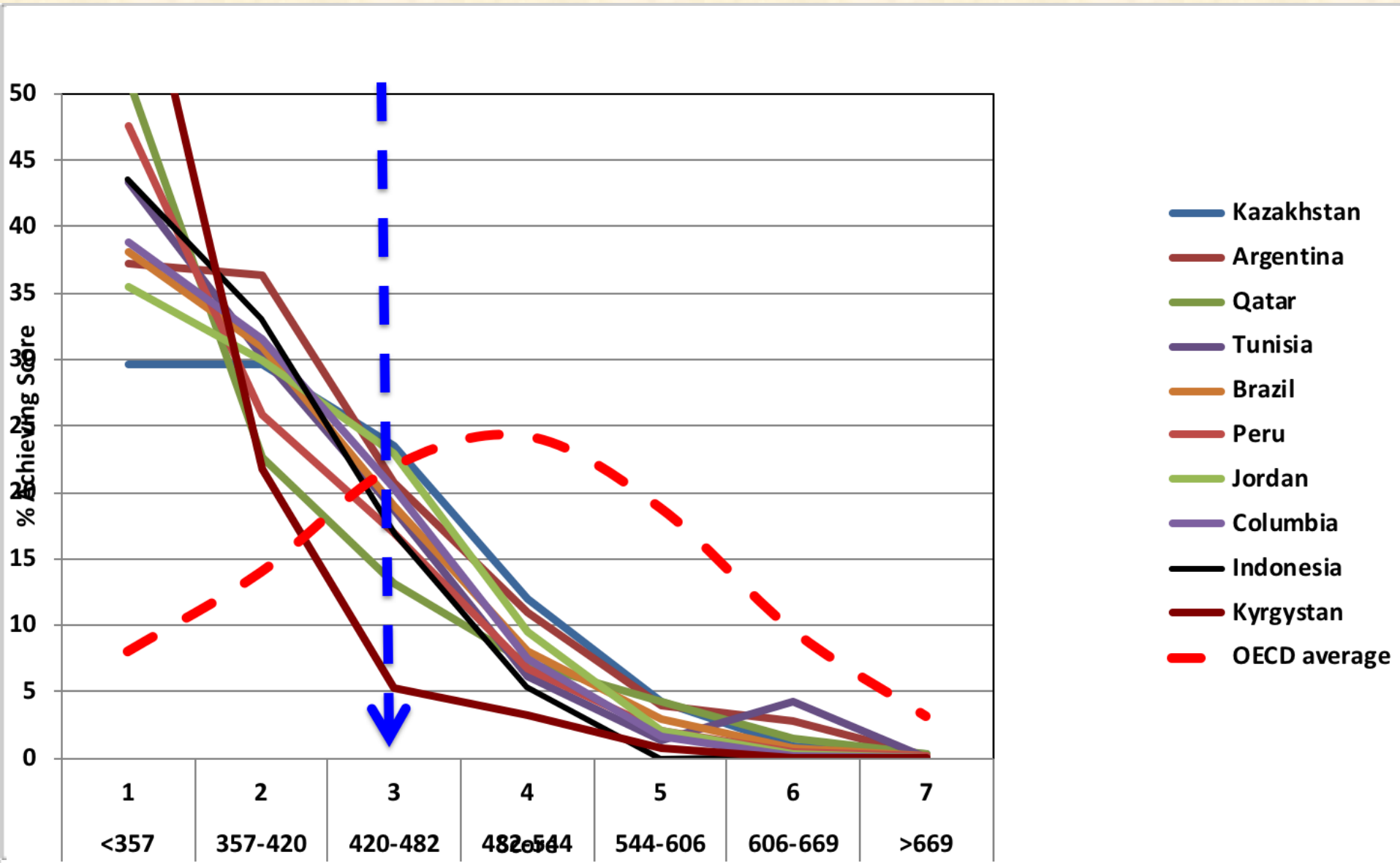
Religion

Low Selection Ratio

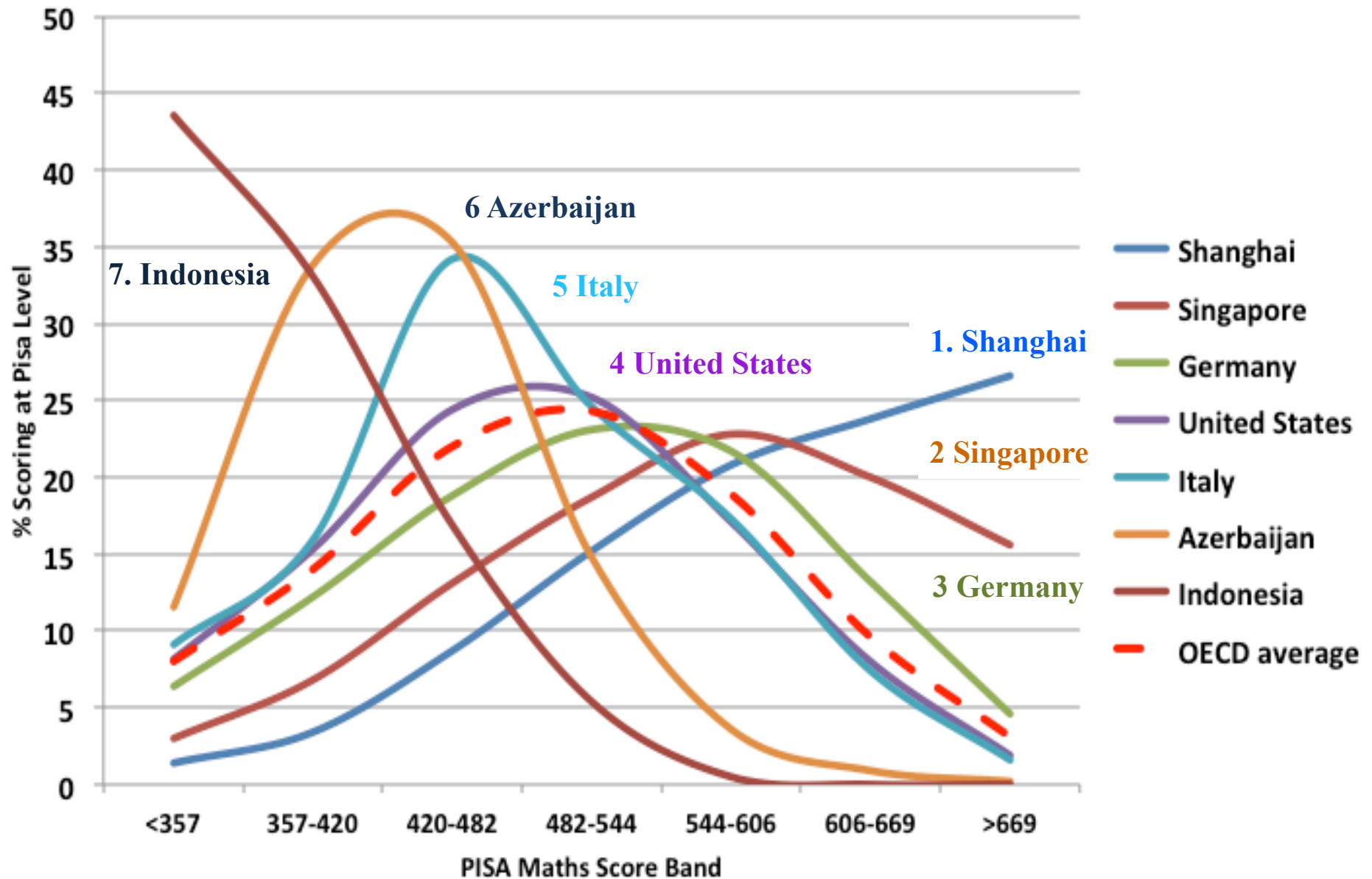


Easy

PISA Maths – Assessing Students or Systems?

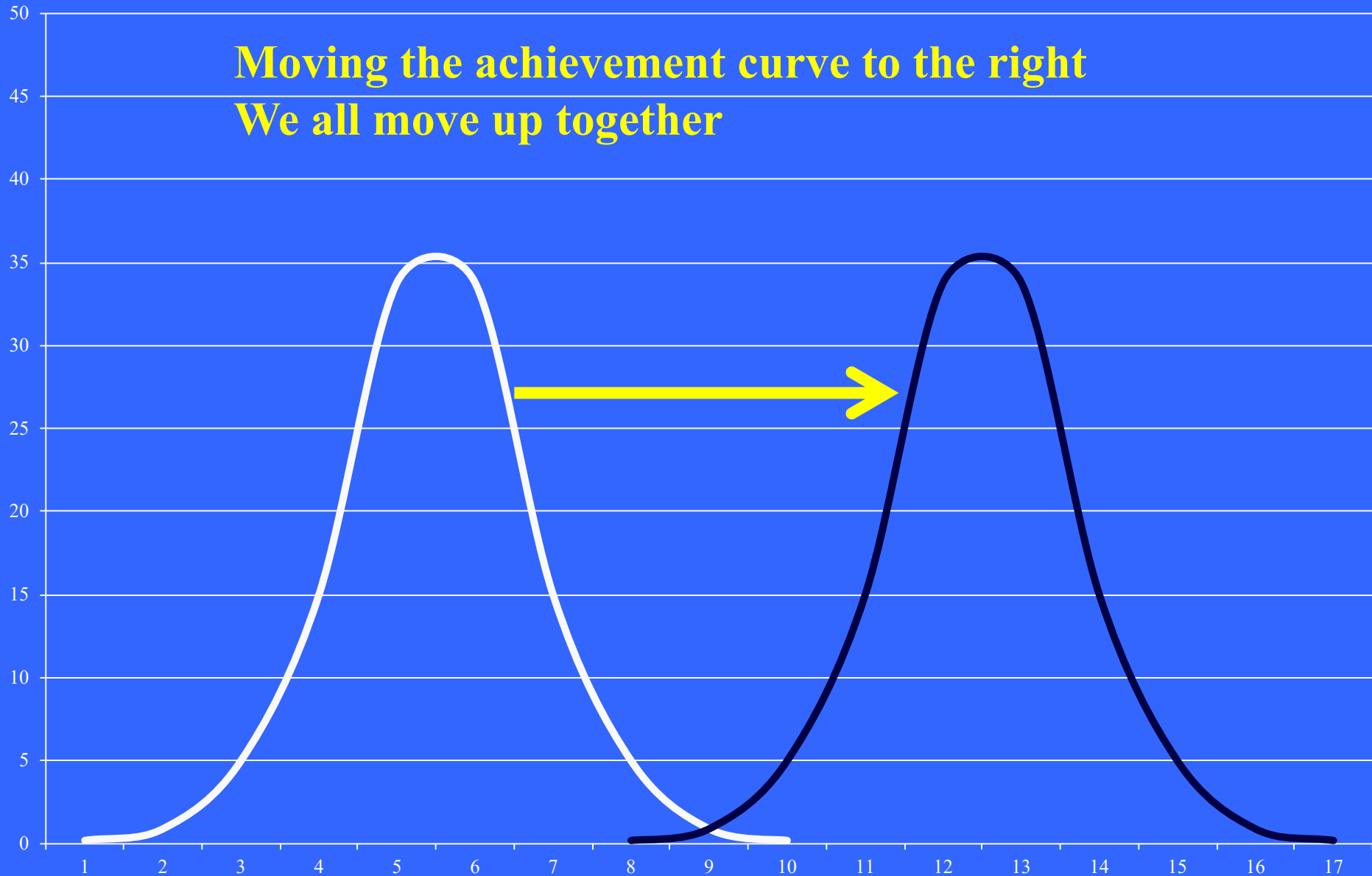


Pisa Maths – Six Patterns of Performance



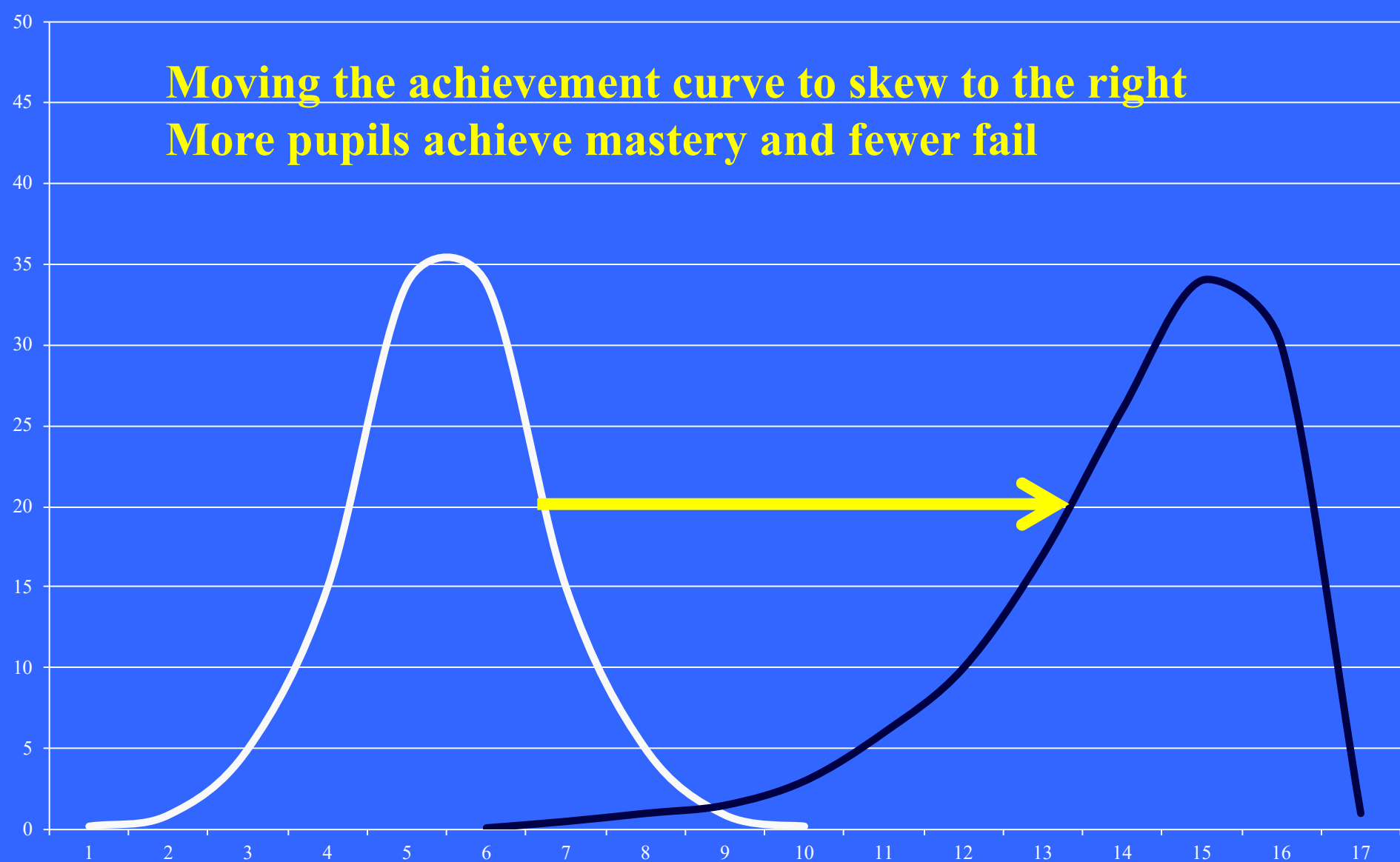
Managing Learning Outcomes?

Moving the achievement curve to the right
We all move up together



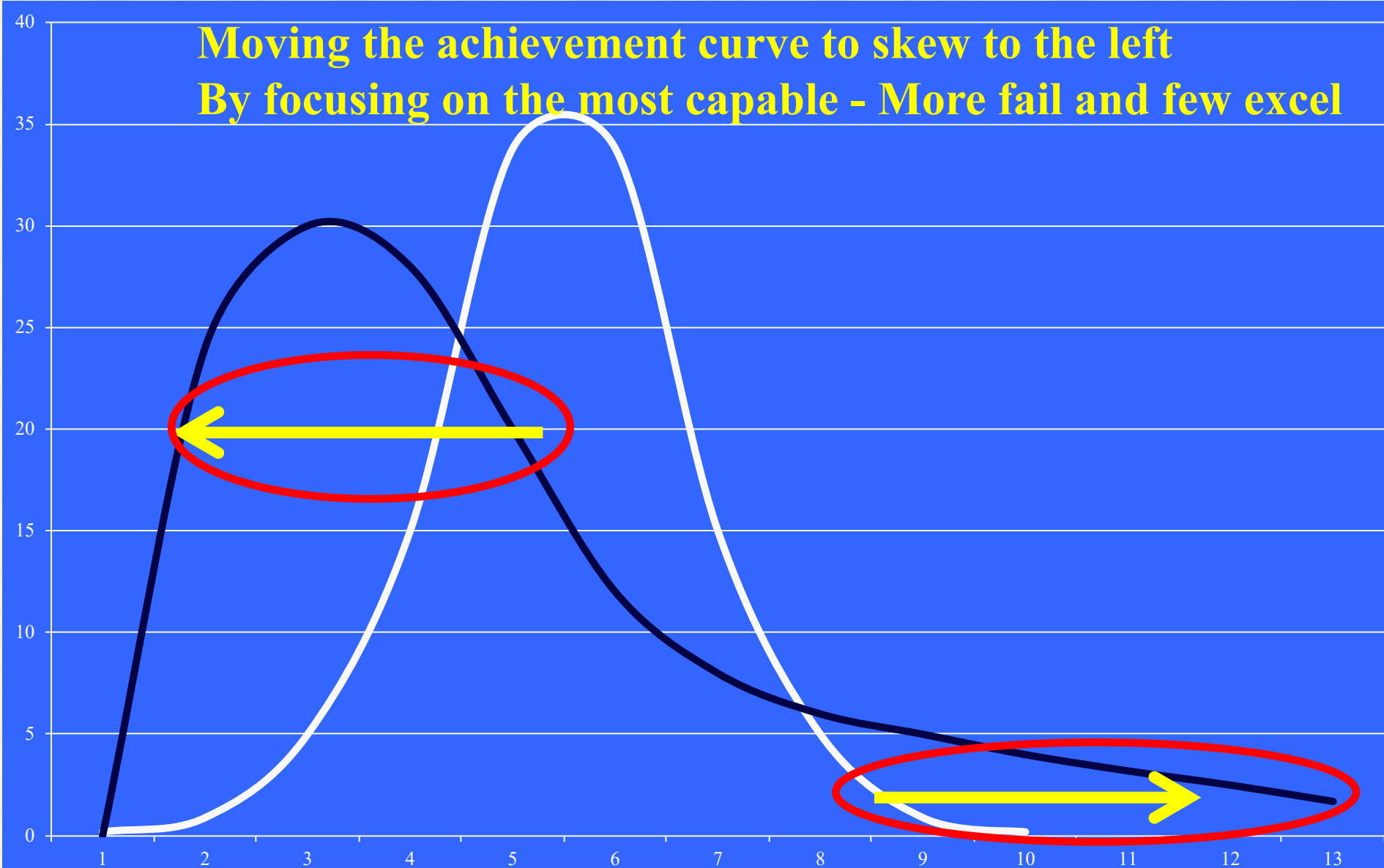
Learning Outcomes?

Moving the achievement curve to skew to the right
More pupils achieve mastery and fewer fail



Learning Outcomes?

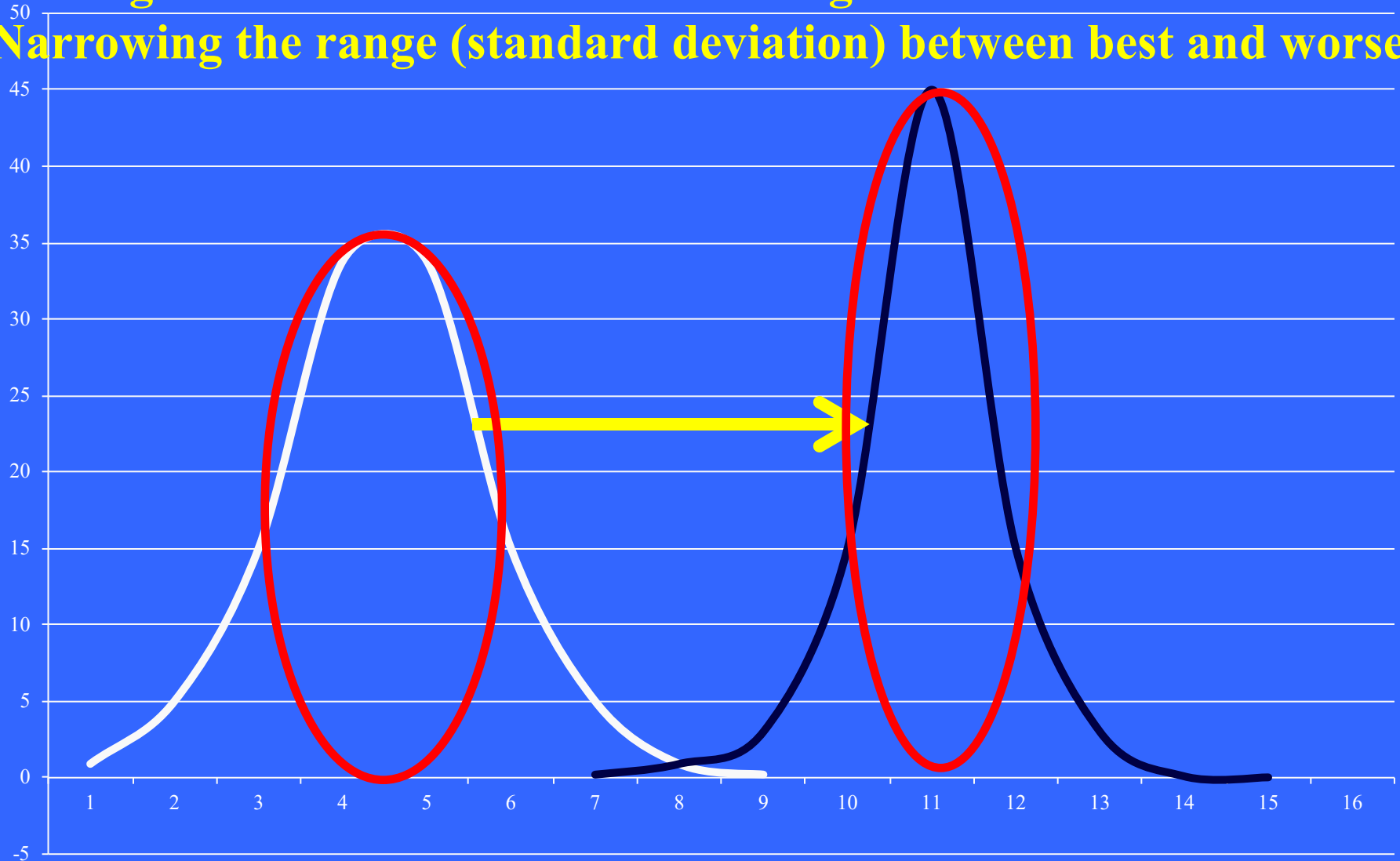
**Moving the achievement curve to skew to the left
By focusing on the most capable - More fail and few excel**



Learning Outcomes?

Moving the achievement curve to the right

Narrowing the range (standard deviation) between best and worse

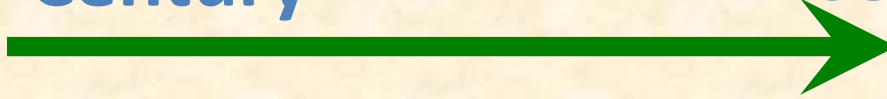


Curriculum Futures

21st Century Curriculum Development?

20th Century

21st Century



Standardised curricula
and summative assessment

Differentiated curricula and
formative assessment

Supply pushed present
orientated

Demand pulled and future
orientated

Learner contribution
minimised

Learner contribution
maximised

Centralised innovation
and development

Decentralised, continuous
improvement

Quality control
at output

Quality control
at input



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