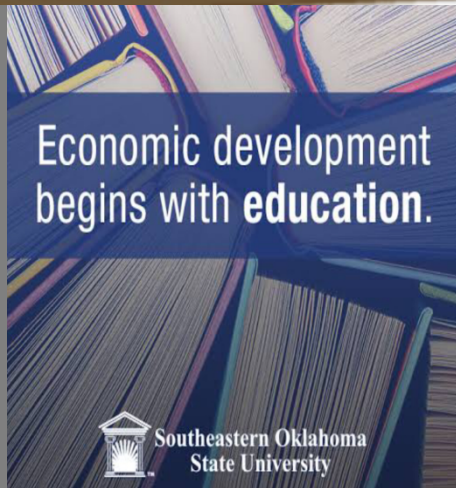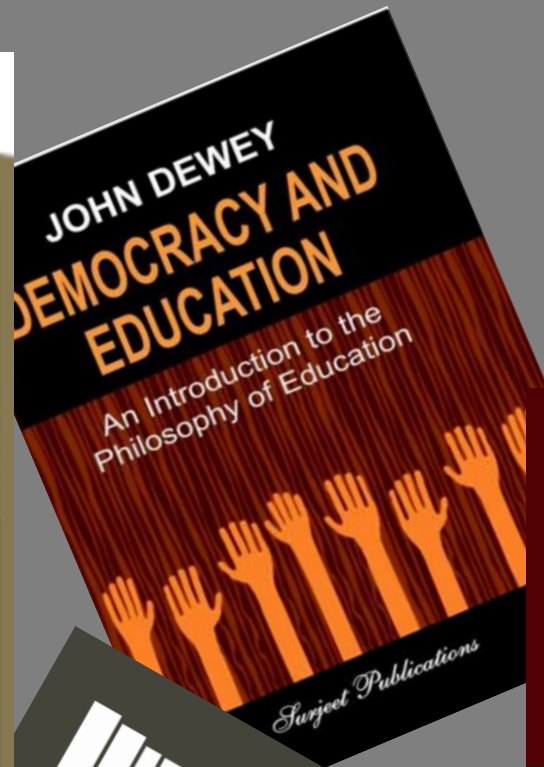# Toward a Better Learning Outcome:
A Reflective View on Our Education

Totok Suprayitno
Ministry of Education and Culture

All begin with education ...
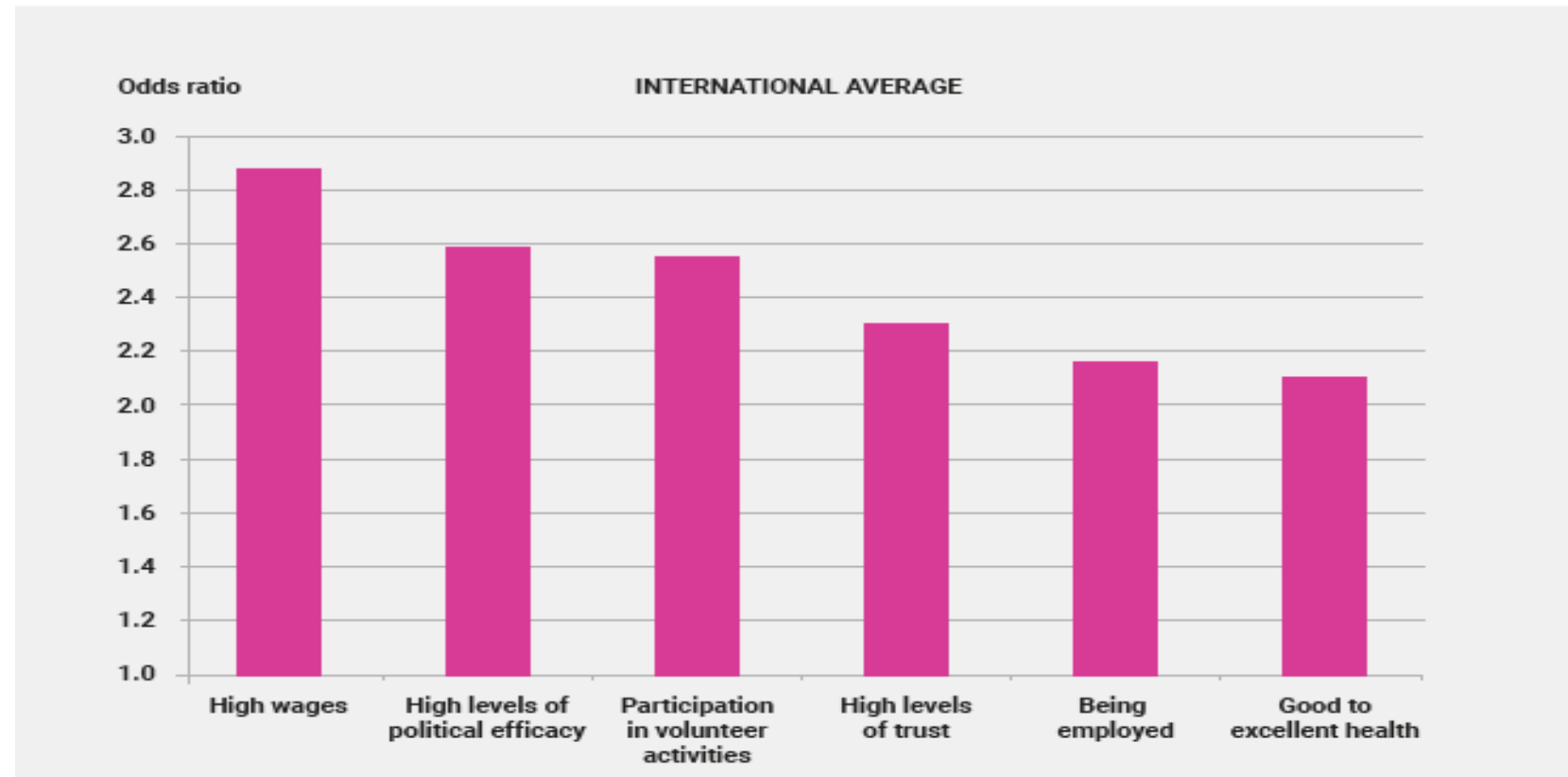
Some Benefits of Education

FIGURE 1.2: HIGHLY LITERATE ADULTS ARE MORE LIKELY TO HAVE POSITIVE SOCIAL AND ECONOMIC OUTCOMES

Increased likelihood (odds ratio) of adults scoring at Level 4/5 in literacy reporting high earnings, high levels of trust and political efficacy, good health, participating in volunteer activities and being employed, compared with adults scoring at or below Level 1 in literacy.

Odds ratio — INTERNATIONAL AVERAGE

High wages · High levels of political efficacy · Participation in volunteer activities · High levels of trust · Being employed · Good to excellent health

Impact of Education on Total & Healthy Life Expectancy

Education Level

- **13+ years**: 79% of adult life healthy
- **9-12 years**
- **0-8 years**: 66% of adult life healthy

Life Expectancy at Age 30
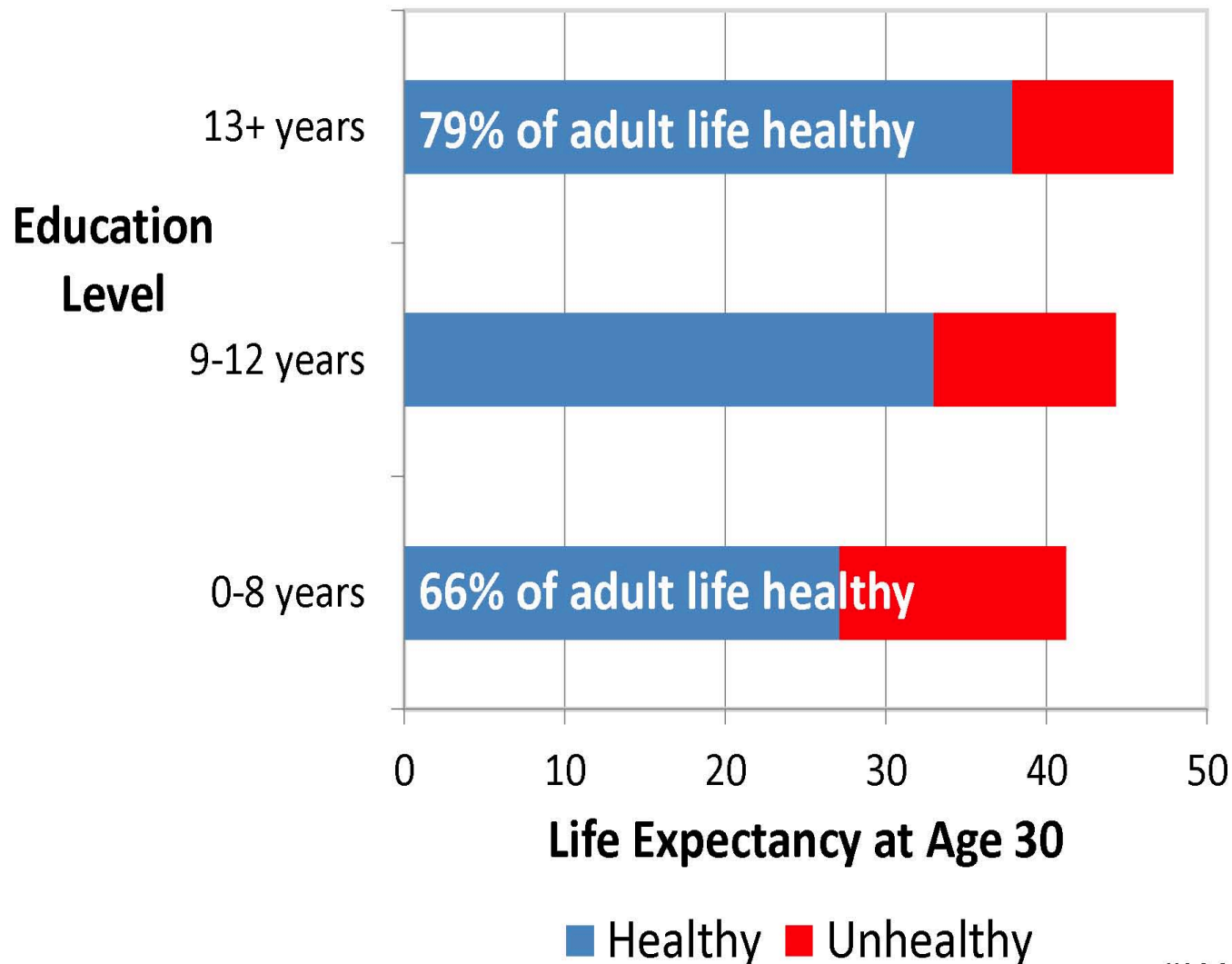
■ Healthy ■ Unhealthy

Source: Crimmins and Saito. 2001. "Trends in healthy life expectancy in the United States, 1970-1990: gender, racial, and educational differences." *Social Science & Medicine* 52:1629-1641

JK Montez

Over their lifetimes, Illinoisans who drop out of high school make hundreds of thousands, even millions, of dollars less than their graduating and higher-educated peers.

$3,389,000 — Master's degree or higher

$2,426,000 — Bachelor's degree

$1,501,000 — Associate's degree

$1,323,000 — Some college

$1,093,000 — Regular high school diploma

$832,000 — GED or equivalent
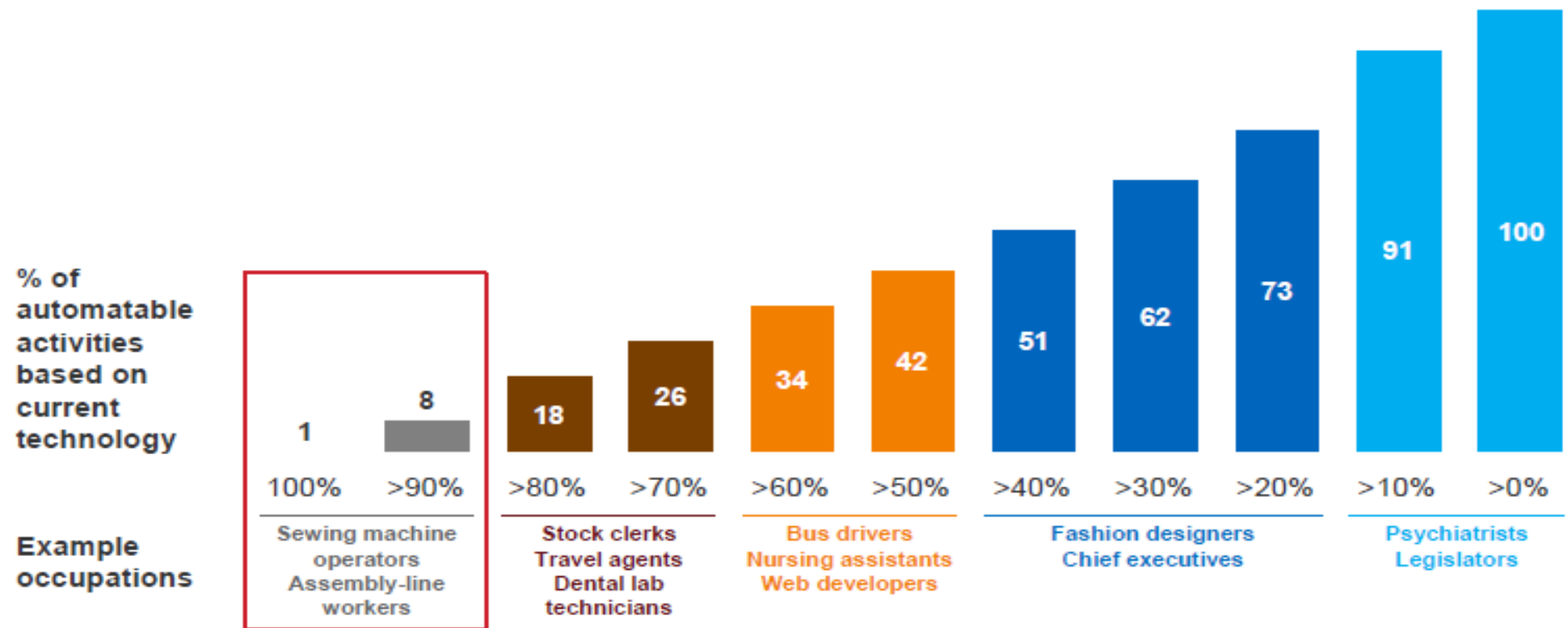
$574,000 — No high school diploma

Lifetime Earnings
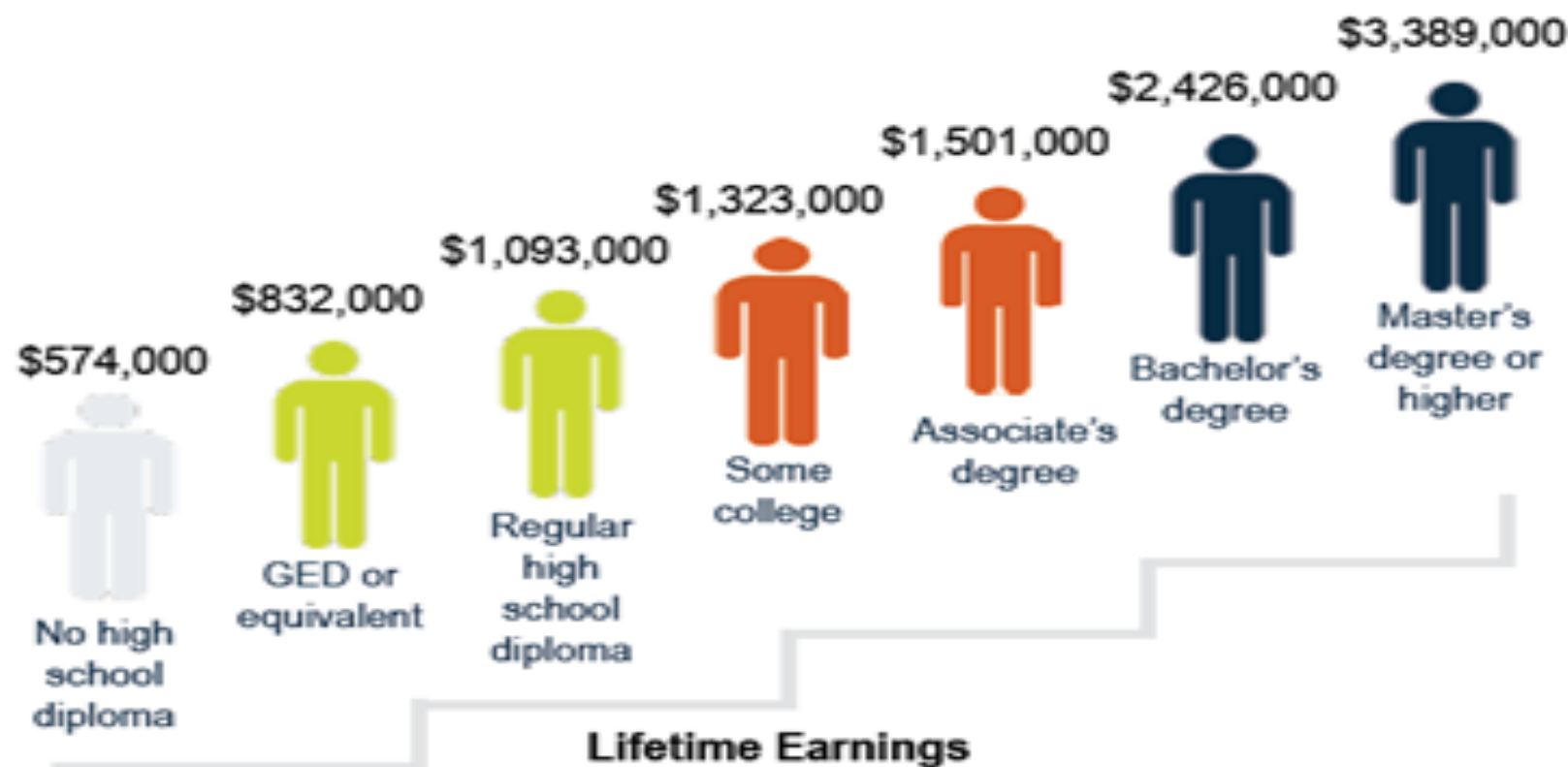
Sum, A., & Khatiwada, I. (2012, November). *High school dropouts in Chicago and Illinois and their persistent labor market problems.* Chicago: Center for Labor Market Studies, Northeastern University. Reflects 18 to 64 year olds.

the world is changing rapidly…

Small share of occupations fully automatable, many more partially automatable

% of occupations
(100% = 820 occupations)

% of automatable activities based on current technology

1	8	18	26	34	42	51	62	73	91	100
100%	>90%	>80%	>70%	>60%	>50%	>40%	>30%	>20%	>10%	>0%

Example occupations

- Sewing machine operators / Assembly-line workers
- Stock clerks / Travel agents / Dental lab technicians
- Bus drivers / Nursing assistants / Web developers
- Fashion designers / Chief executives
- Psychiatrists / Legislators

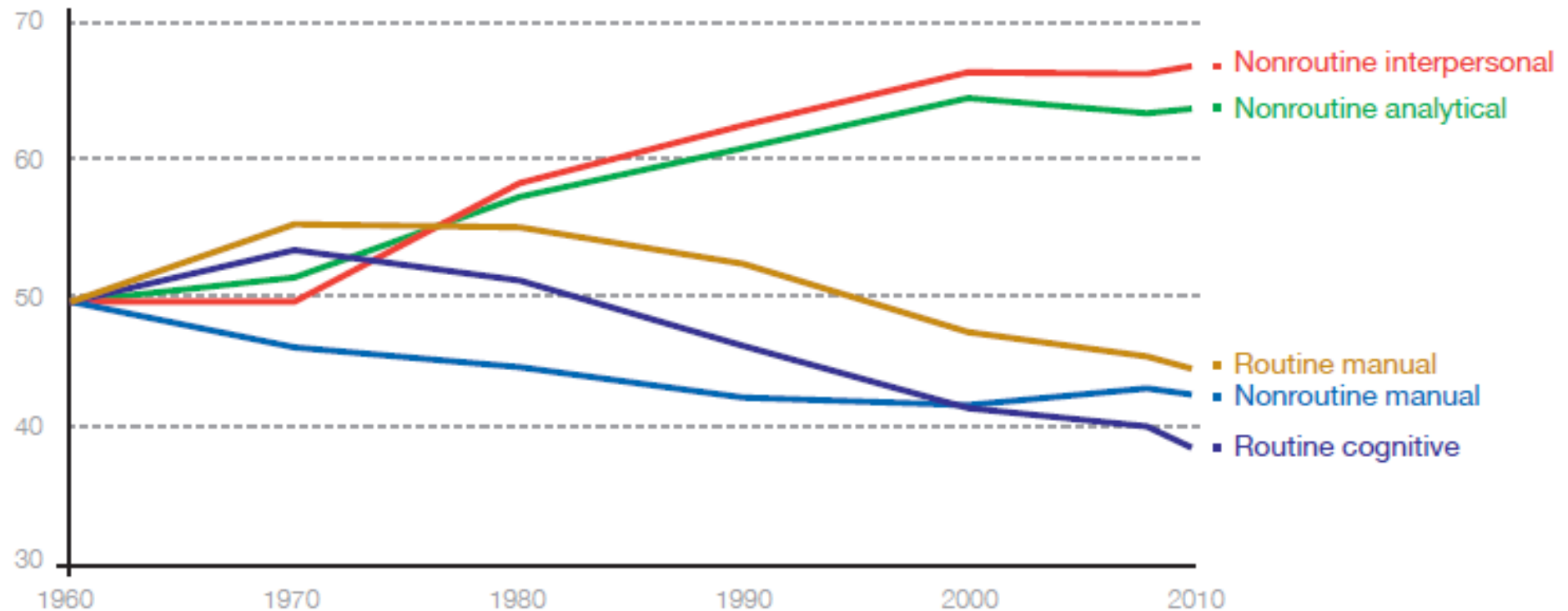While about **<10%** of occupations have close to **~100%** of tasks auto-matable ... **~60%** of occupations have **~30%** of tasks automatable

BASED ON DEMONSTRATED TECHNOLOGY

Exhibit 1: The labour market increasingly demands higher-order skills

Tasks by percentile for the US economy, 1960-2009

Note: The starting point of the chart has been indexed to 1960.
Adapted from Levy, Frank and Richard J. Murnane. "Dancing with robots: Human skills for computerized work." Third Way NEXT. 2013.
(http://content.thirdway.org/publications/714/Dancing-With-Robots.pdf) Data provided by David Autor at MIT and updated from the original 2003
study by Autor, Levy and Murnane.

New Vision for Education
Unlocking the Potential of Technology

...and we envision

21st-Century Skills

Foundational Literacies
How students apply core skills to everyday tasks

1. Literacy
2. Numeracy
3. Scientific literacy
4. ICT literacy
5. Financial literacy
6. Cultural and civic literacy

Competencies
How students approach complex challenges

7. Critical thinking/ problem-solving
8. Creativity
9. Communication
10. Collaboration

Character Qualities
How students approach their changing environment

11. Curiosity
12. Initiative
13. Persistence/ grit
14. Adaptability
15. Leadership
16. Social and cultural awareness

Lifelong Learning

Education needs to prepare students

- to deal with more rapid change than ever before
- for jobs that have not yet been created
- using technologies that have not yet been invented
- to tackle societal challenges that we can't yet imagine

Andreas Schleicher

It's about

- *New ways of thinking,* involving creativity, critical thinking, problem-solving and decision-making
- *New ways of working,* including communication and collaboration
- *Tools for working,* including the capacity to recognize and exploit the potential of new technologies
- *The capacity to live in a multi-faceted world as active and responsible citizens.*

The Economist

INSIDE: A 14-PAGE SPECIAL REPORT ON TECH STARTUPS

If the French ran America
China cracks down on microblogs
New opportunities for organised crime
Regulators go soft on Europe's banks
Google and the internet of things

JANUARY 18TH–24TH 2014   Economist.com

Coming to an office near you...

What today's technology will do to tomorrow's jobs

… things that are easy to teach are now easy to automate, digitize or outsource

Let's reflect

Our schooling is doing great!

...schooling is expanding..

Expanding Access, Education for All

Years of chooling

a. Trend of years of schooling among aged 15+ (2003-2016)
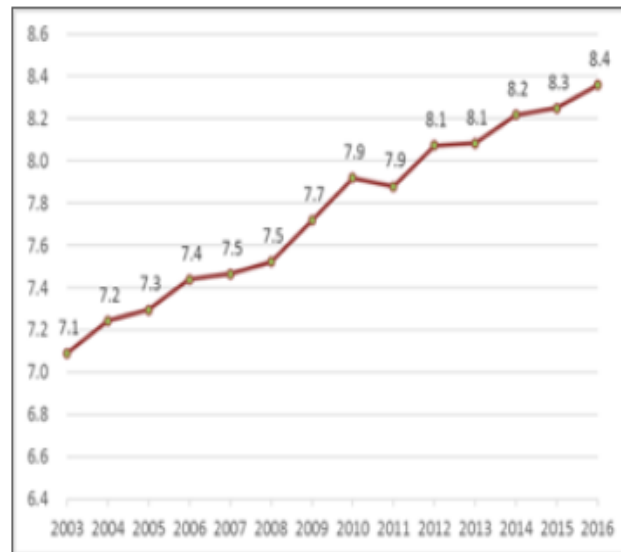
b. Years of schooling by age-group, 2016
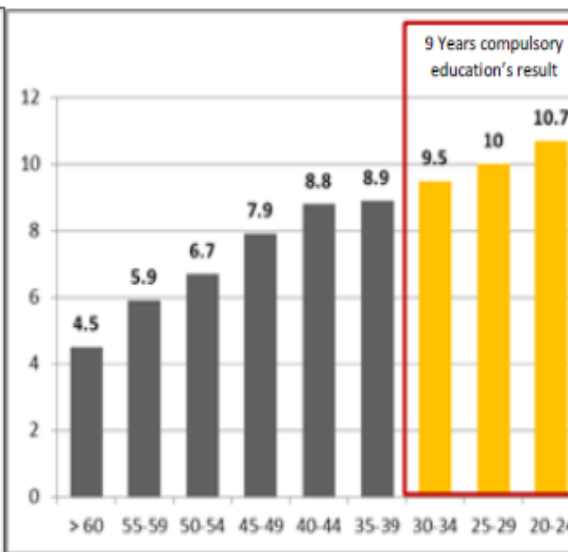
School enrollment of 16-18 year olds grew for all income levels. But faster growth was registered among poorer Indonesians
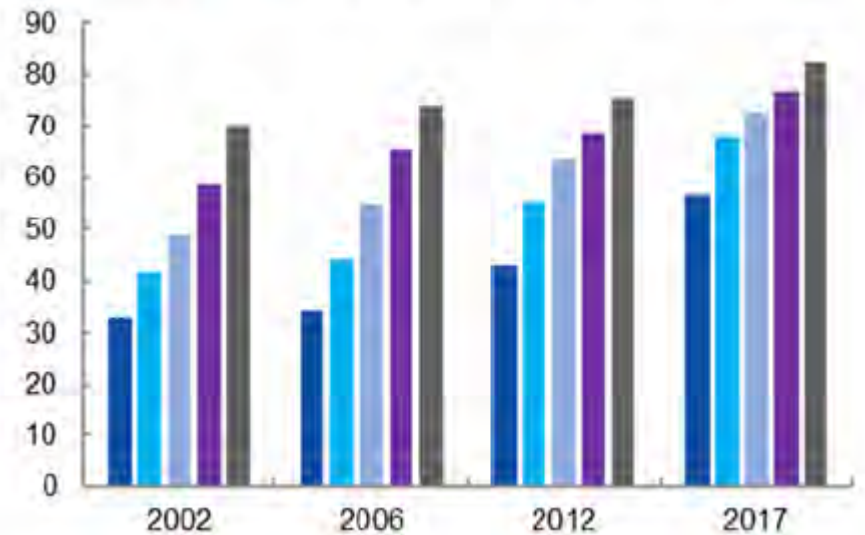
Socio economic index

- 9 Years Compulsory Basic Education has shown the result → those starting junior high school in 1994 have average years of schooling of above 9 years.

Investing More in Education

Since early 2000s, education spending in Indonesia has increased dramatically

The 2003 Constitutional amendment mandated a total budget allocation at least 20% from APBN and APBD has to be allocated for education.

National education expenditure by level of governments, 2001-2016
(LHS: IDR trillion; RHS: % GDP and total spending)
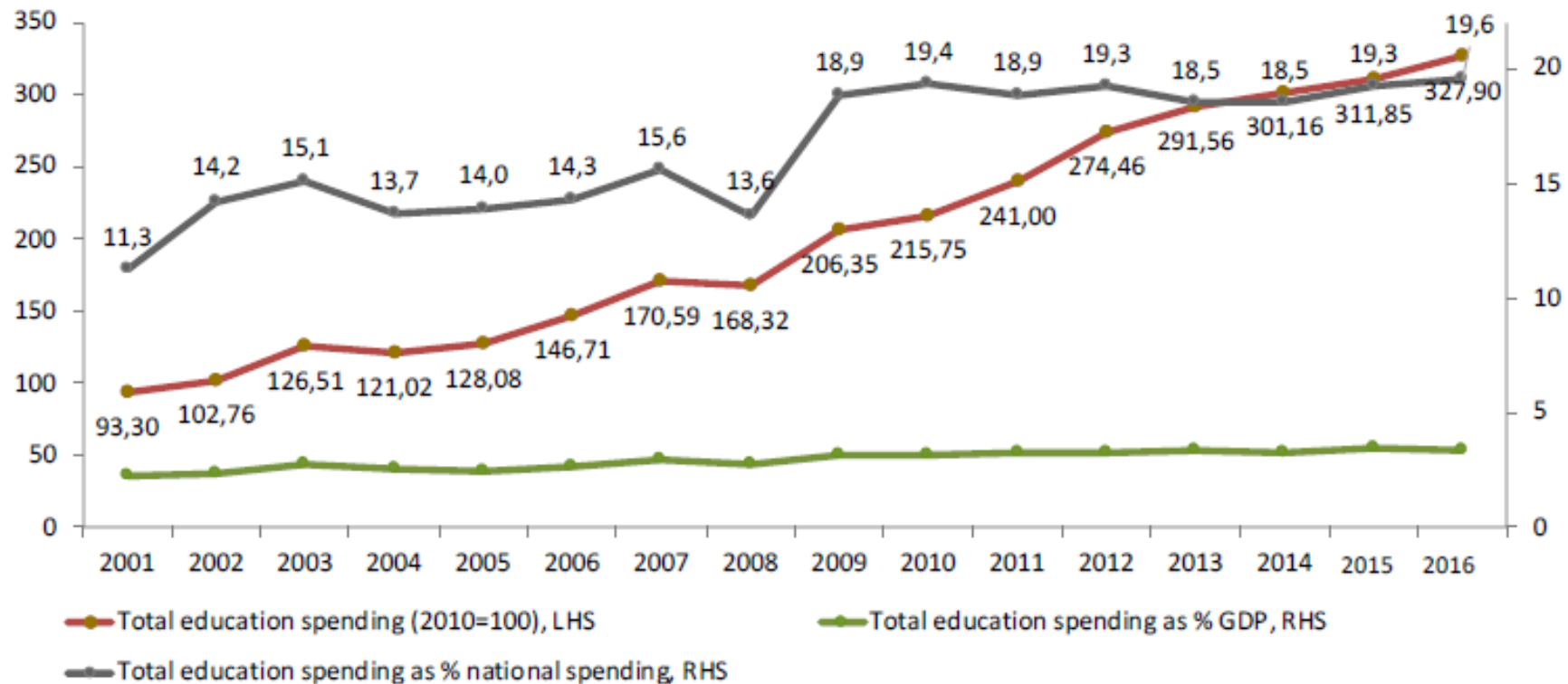
Decentralized Budget on Education

BUDGET ALLOCATION FOR EDUCATION, 2018

APBN 2018
2.204,4 T   20%

BUDGET FOR EDUCATION
440,9 T

EXPENDITURE FOR ENDOWMENT FUND
15, 0 T or 3,5%

KEMENDIKBUD
40,1 T or 9,1% from budget for education

KEMENRISTEKDIKTI
40,4 T or 9,2% from budget for education

KEMENAG
52,7 T or 12 % from budget for education

17 other ministries/institutions
12,7 T or 2,9 % from budget for education

TRANSFERRED TO LOCAL GOVT
279,3 T atau 63,3%
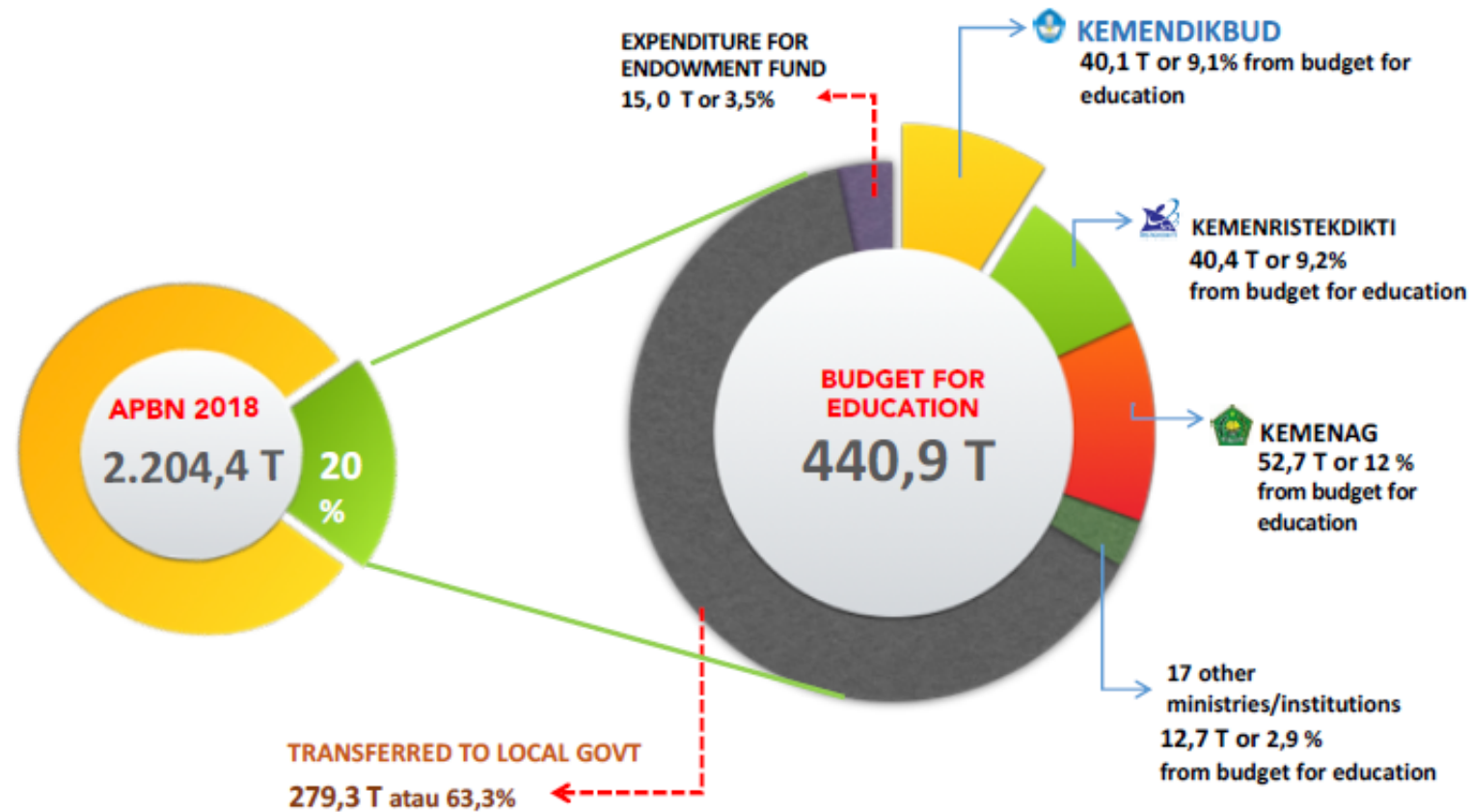
Note: Does not include the budget from local government revenue

... but, how much are they learning?

This is disturbing…

50% Indonesian student in below low category and 20% in low category (TIMSS 2015 result).

Tiga ribu dua puluh tiga rupiah dapat dituliskan sebagai:

- (A) 323
- (B) 3.023
- (C) 30.023
- (D) 300.023

Example of Low benchmark items

Country	% correct
Internasional	97.1 %
Indonesia	59.5 %
Arab Saudi	58.2 %
Maroko	62.0 %
Taipei	97.7 %
Singapore	93.7 %
Korea	96. 5 %

Low category description: student able to compute simple mathematical notation in a routine situation and show basic understanding on numeracy.

This is even more disturbing…

Kelemahan siswa pada Literasi **Matematika** adalah Kemampuan Mengolah informasi:

- mencerna permasalahan,
- mengidentifikasi informasi,
- memilah informasi dan menggunakannya.
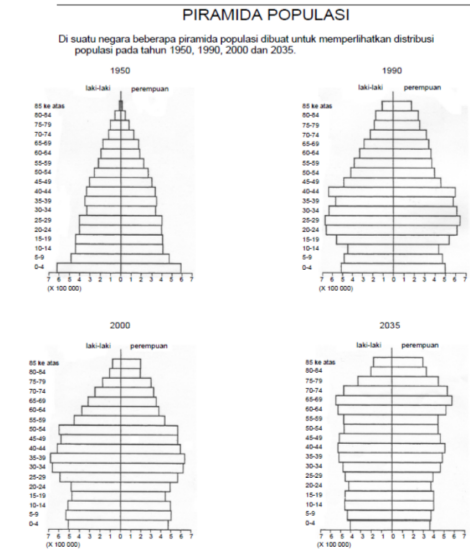
Pertanyaan 5: PIRAMIDA POPULASI

PM155Q03 – 00 11 12 13 21 22 23 99

Menurut piramida di atas, hanya bagian dari kelompok umur 0 – 4 pada tahun 1950 yang akan mencapai umur 85 ke atas. Jika dianggap tidak ada pengaruh migrasi, berapa persentase orang yang mencapai umur tersebut ? Perlihatkan juga cara memperoleh jawabannya.

1% menjawab benar

Negara	% benar
Singapore	32.13
Thailand	4.43
Malaysia	10.66
Vietnam	9.23
OECD	13.68

Kelemahan siswa pada literasi SAINS

SUSU

Bacalah informasi berikut dan jawablah pertanyaan-pertanyaan yang mengikutinya.

Susu adalah makanan pertama yang diterima mamalia muda dalam hidupnya. Penting bagi kesehatan mamalia muda bahwa nutrisi dalam susu yang mereka minum sama dengan yang ada dalam susu ibunya.

Tabel di bawah ini memperlihatkan pada kita tentang zat-zat yang ada dalam susu tiga mamalia: sapi, serigala dan manusia. Angka menunjukkan jumlah rata-rata lemak, protein dan karbohidrat di dalam 100 g susu.

Zat	Susu sapi (g)	Susu serigala (g)	Susu manusia (g)
Lemak	3,9	9,6	4,0
Protein	3,4	9,2	1,4
Karbohidrat	4,9	3,4	7,0

Ada beberapa legenda dan cerita tentang bayi manusia yang dibesarkan oleh serigala-serigala dan minum susu serigala. Salah satu dari cerita ini mengatakan bahwa seorang bayi manusia dibesarkan oleh serigala-serigala di dalam hutan Eropa purba.

Informasi pada tabel dapat digunakan untuk mendukung ide bahwa cerita ini benar atau mendukung ide bahwa cerita ini tidak benar.

Pertanyaan 1: SUSU

PS326Q01 – 0 1 9

Berikan bukti dari tabel yang mendukung gagasan bahwa cerita itu mungkin benar.

Kelemahan siswa Indonesia: Berfikir scientific untuk memverifikasi suatu informasi logis ataukah tidak berdasarkan bukti ilmiah

5% menjawab benar

No Improvement in National Exam Score

Moved to CBT,
no longer for graduation

National Exam Mean Score

Legend: SMP/MTs — SMA/MA IPA — SMA/MA IPS — SMA/MA BAHASA — SMK

Years: 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018
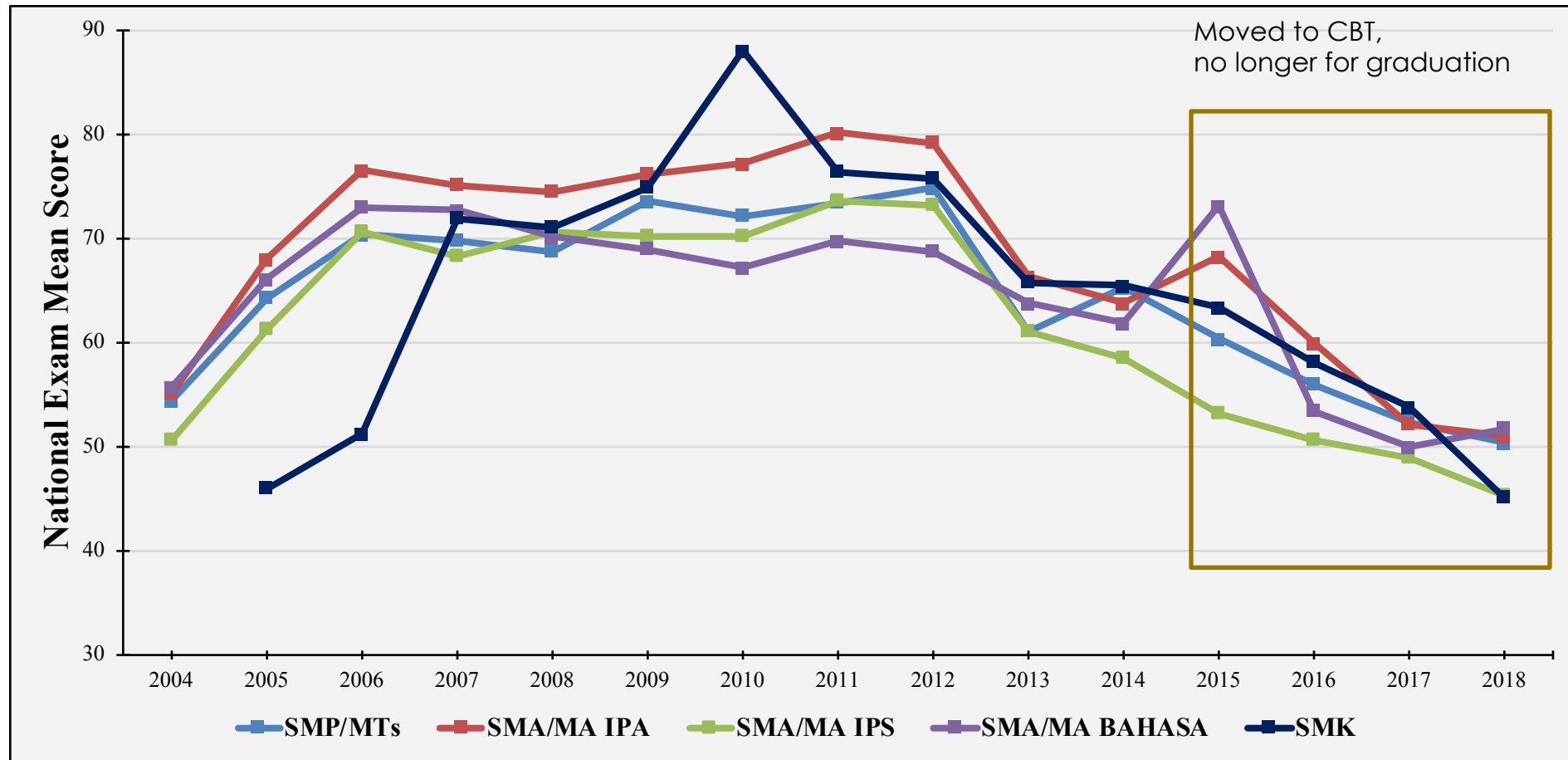
Disparity in Learning Outcome (1)
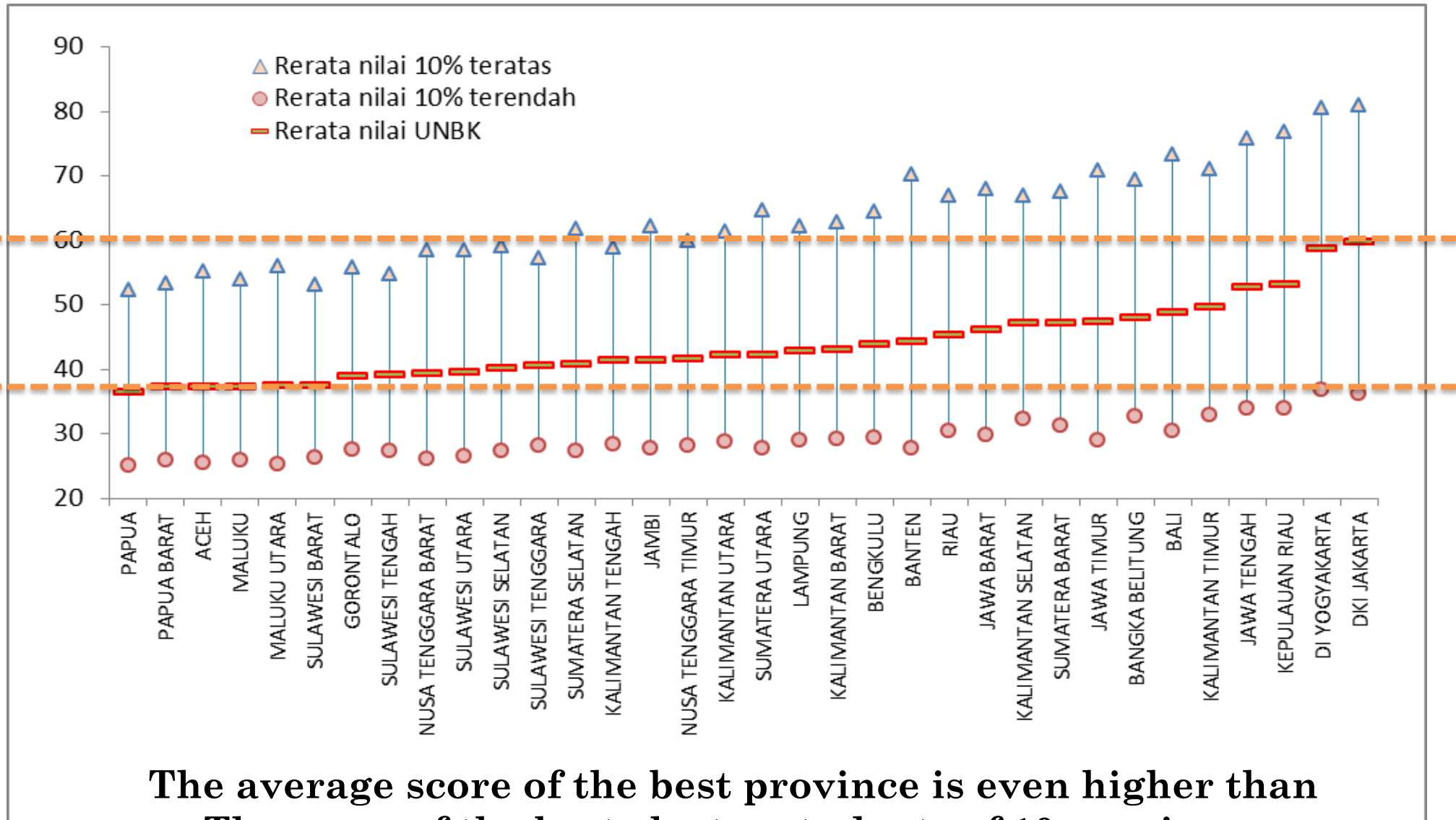
**The average score of the best province is even higher than
The score of the best cluster students of 10 provinces**

Disparity in Learning Outcome (2)
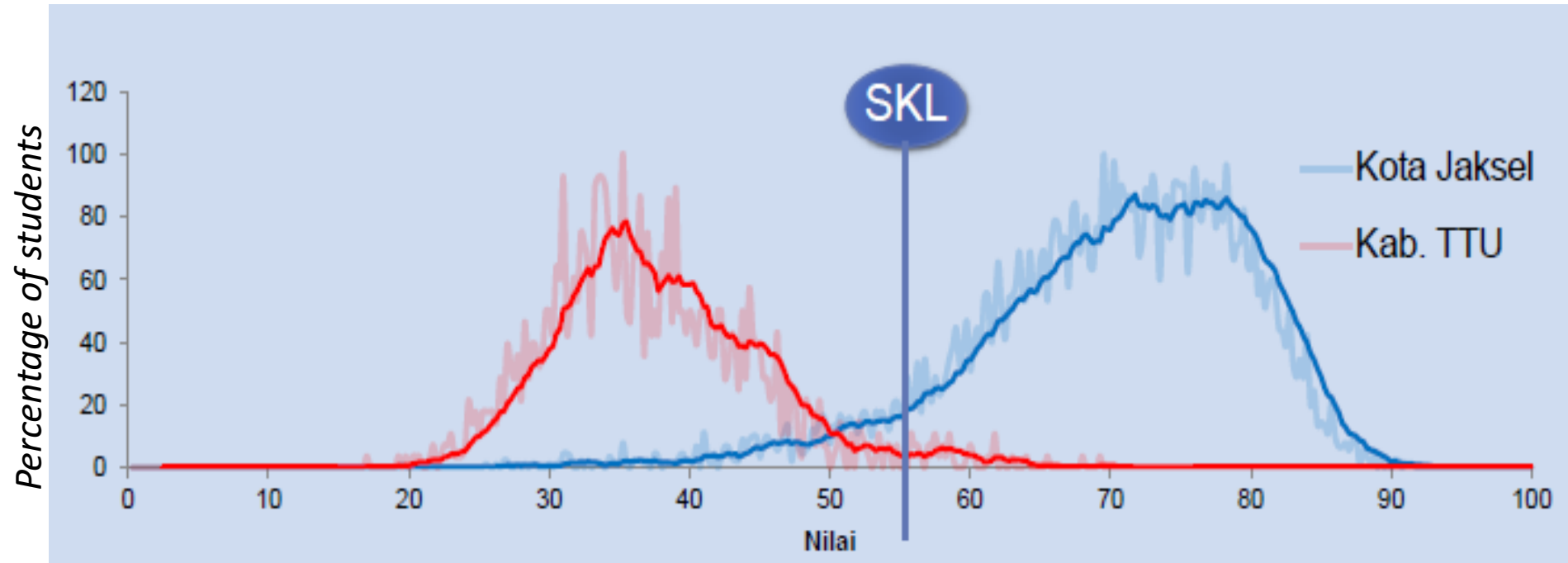
The achievement distribution between two districts
are completely separated

PISA data (2003-2015): Quality improving, not fast enough

PISA Mathematic Score

- ◆ OECD Average
- ▬ Japan
- ▲ Korea, Republic of
- ✕ Hong Kong - China
- ✳ Thailand
- ● Singapore
- ✚ Vietnam
- ■ Indonesia

PISA cycle

PISA RESULTS BY GRADE, PISA YEAR
AND SOCIOECONOMIC CONDITIONS

10th grade - 2015
10th grade - 2003
9th grade - 2015
9th grade - 2003
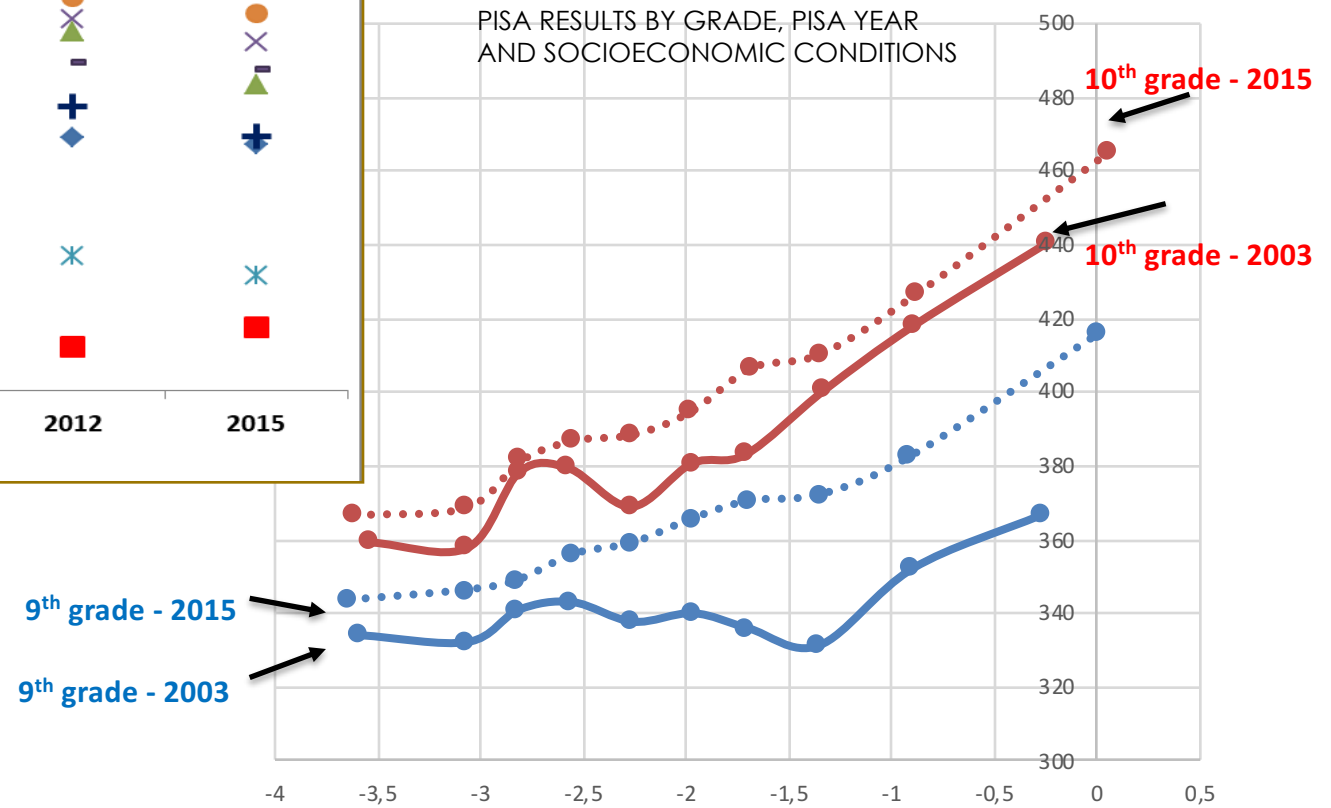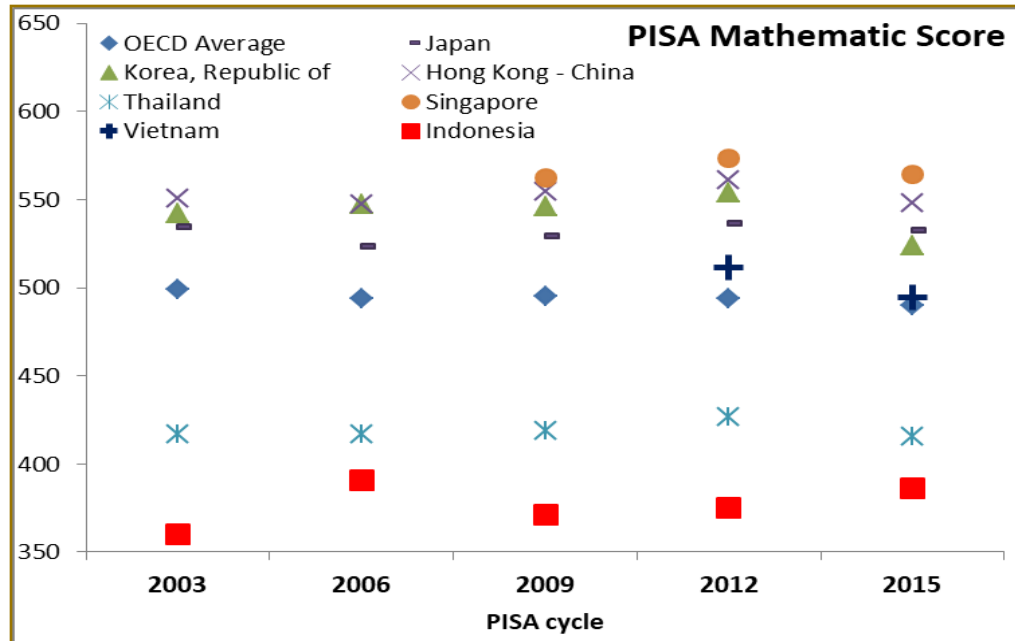
Gains of 9th graders are larger than 10th graders.
Larger gains are observed on wealthier students on 9th grades.

Low budget, low score

Average PISA 2015 Math Score vs. Public Expenditure per Student (constant 2013 PPP$)
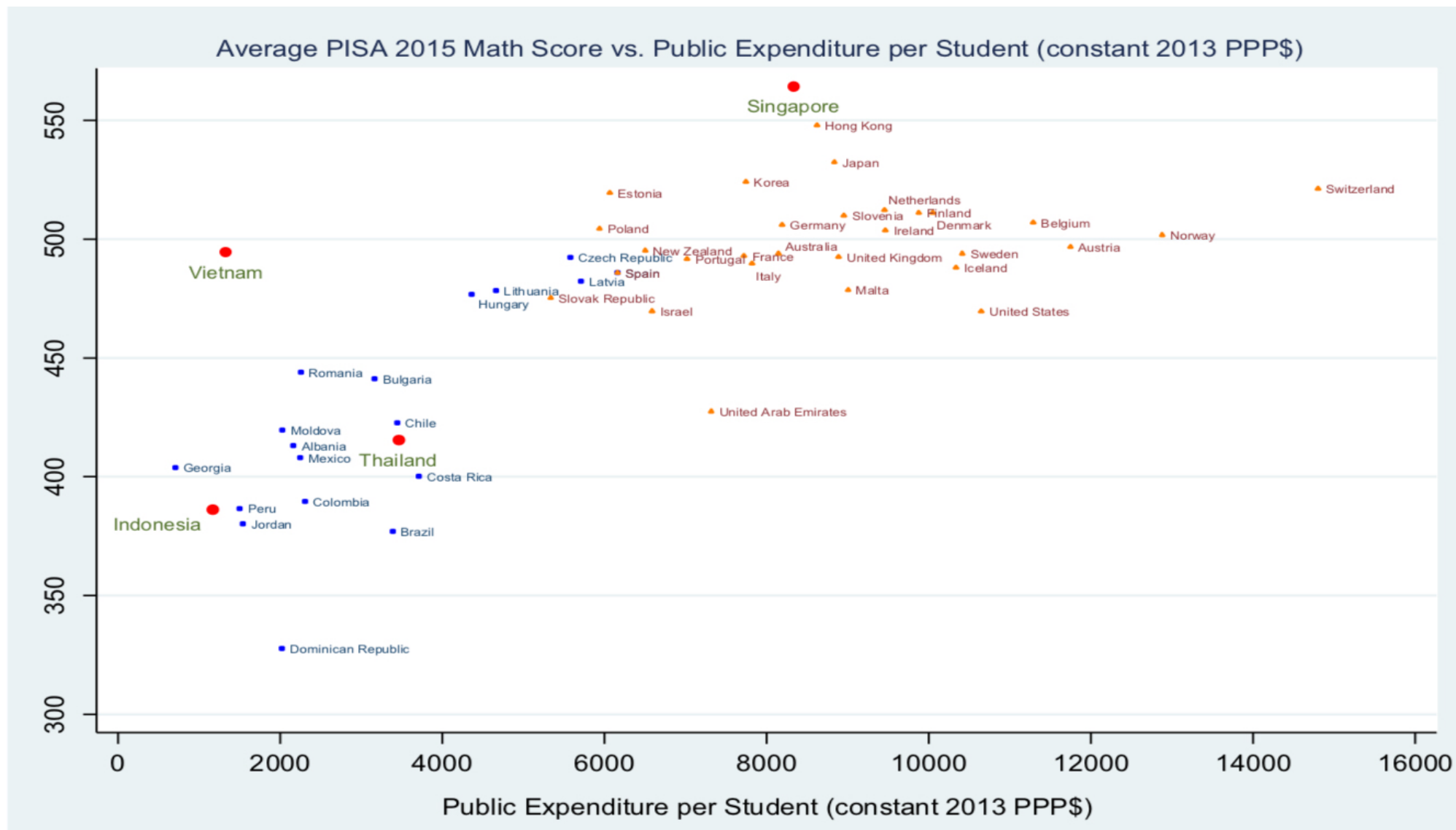
Schooling without learning?

Isomorphic mimicry in snakes and schools

(Conant 1958)
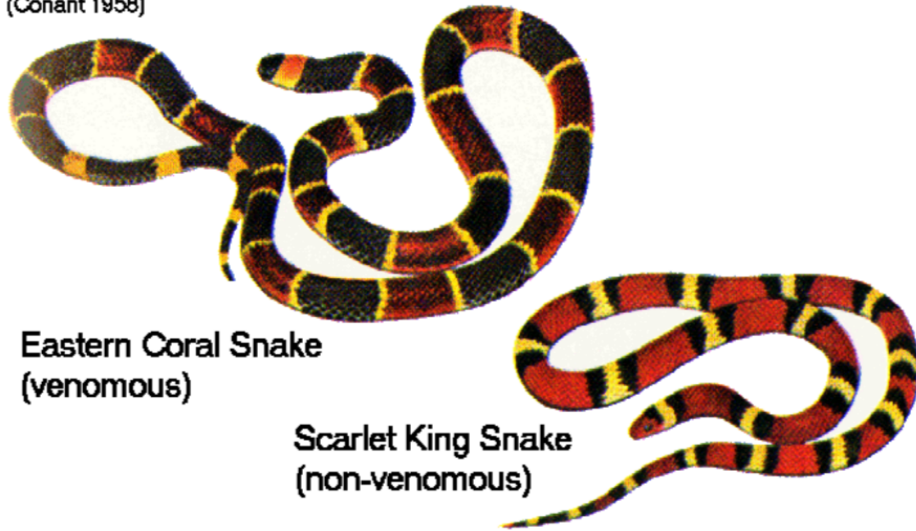
Eastern Coral Snake (venomous)

Scarlet King Snake (non-venomous)

Camouflage of looking like a poisonous snake is a survival strategy—without the bother of being poisonous

Camouflage of looking like a school—buildings, teachers, kids in uniform—allows public schools to survive without all the bother of educating children

(Taken from Prof. Lant Pritchett, The Rebirth of Modern Education)

Moving forward:
focus more on learning

The Learning Cycle

WRITTEN OR INTENDED CURRICULUM

DESIGN

DELIVERY

LEARNING PROCESS

TESTED OR ACHIEVED CURRICULUM

DELIVERY

TAUGHT OR DELIVERED CURRICULUM

© June Kaminski
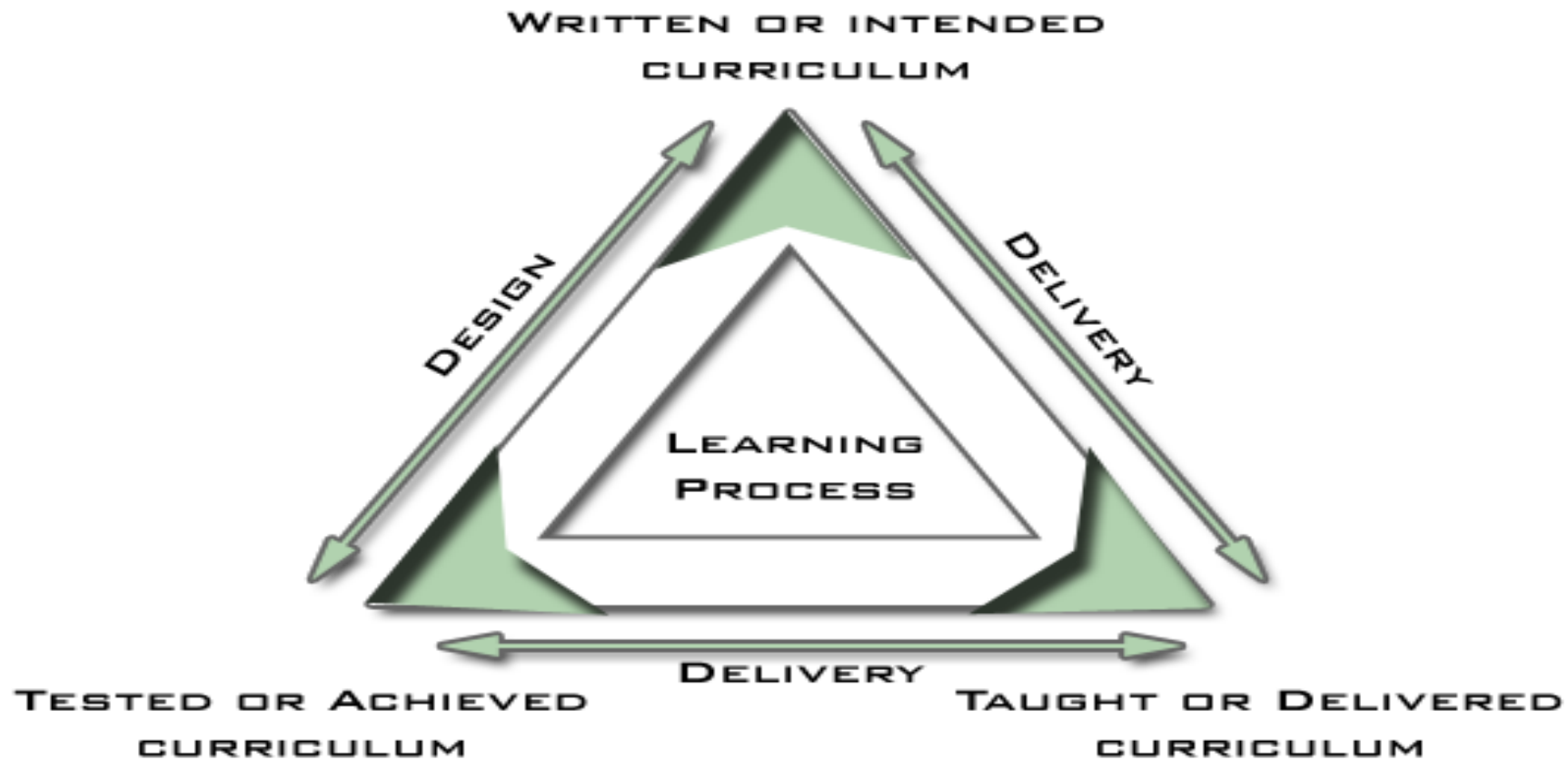
What works, at what cost

Effectiveness and cost of education strategies

Effect in additional months' progress

Relative costliness
5 x $ = most expensive

Strategy	Effect	Cost
Feedback to pupils	9	$
Meta-cognitive strategies*	8	$
Peer tutoring	6	$
Collaborative group learning	5	$
Reducing class size to <20	3	$ $ $ $ $
Individualised instruction	2	$
Mentoring of pupils	1	$ $ $
Teaching assistants	1	$ $ $ $
Improving school buildings	0	$ $
Streaming by ability	-1	$
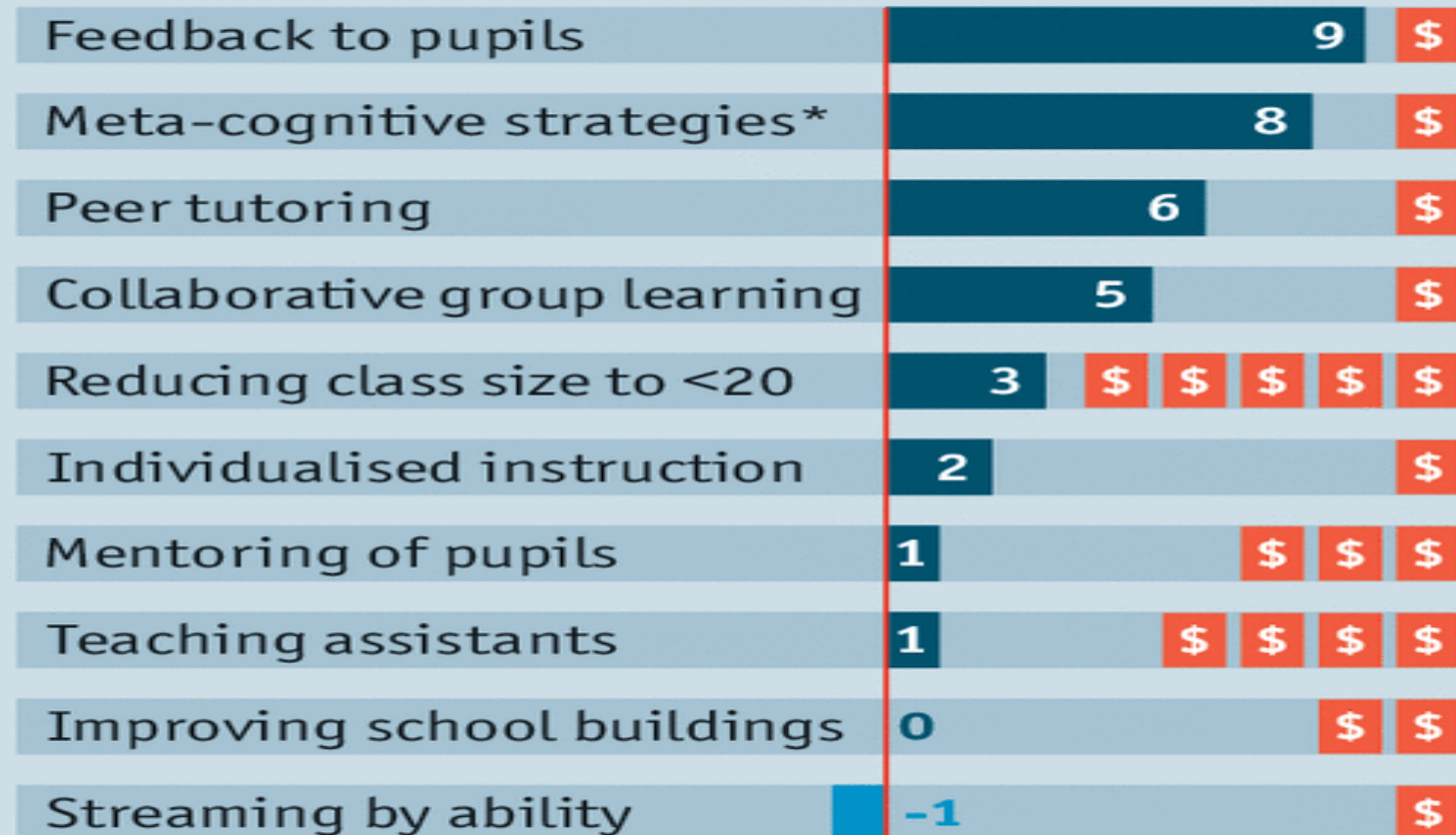
Source: Education Endowment Foundation

*Helping pupils think about their own learning more explicitly

Economist.com

Let's move on

(1)
Be Honest!

Paper Based National Exam 2014 – Big Effort, Unreliable Results

79,429 school
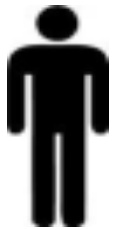
6,709,250 students

35 million copies of exam paper
Must be distributed on time

65 subjects **100,000** items

700,000 test administrator

Administered in
34 Provinces, 11 Countries

Integrity Index

Score

IIUN IPA

NILAI UN IPA
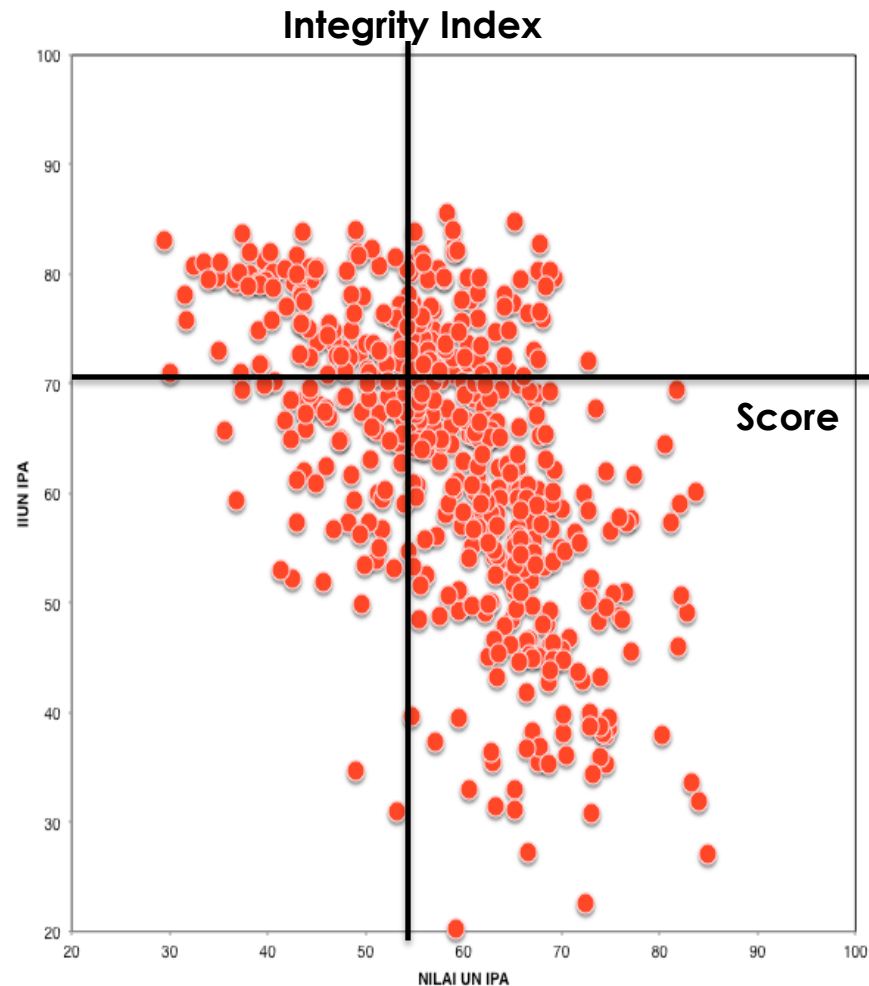
Getting "the true" information for giving valid feedback

CBT 2017

National Exam Score (y-axis: 35–70)
Integrity Index 2016 (x-axis: <50, <60, <70, <80, >80, CBT)

Legend: 2016, 2017
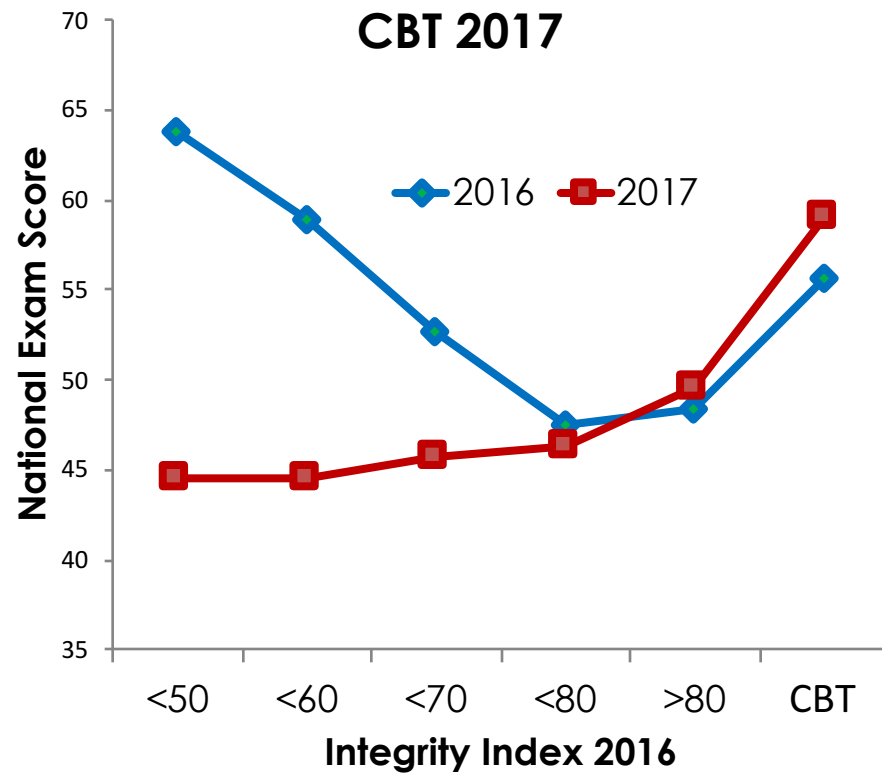
Integrity Index 2016	Changes on National Exam score
<50	-19.21
<60	-14.28
<70	-6.88
<80	-1.15
>80	**1.16**
CBT	**3,39**

Moved to CBT from PBT in 2016, adjust the score of national exam.
Schools which indicated as low integrity in 2016 decreased their performance, while schools that has already CBT or high integrity in 2016, their performance increased.

Let's move on

(2)
Use proper assessments
(Stop abusing UN)

Penilaian sebagai Penggerak Mutu Pembelajaran

UN bukanlah segalanya

- Formatif – diagnostik
- Harian oleh guru
- Ranah spiritual, sosial, keterampilan dan pengetahuan
- Aspek *multiple intelligence*

Penilaian Level Kelas

Benchmark Internasional

- Kompetensi
- Literasi
- Kelas 4, 8, usia 15 tahun
- Survei
- PISA, TIMSS

Ujian Nasional (UN)

Spiritual   Sosial

SKL

Pengetahuan   Keterampilan

Penilaian Level Sekolah (c/:USBN)

- Formatif
- *Summative*
- Semua kelas
- Semesteran
- Akhir tahun
- Akhir jenjang
- Oleh sekolah
- AKSI sekolah 2,4,8,10

Tanpa UN, akuntabilitas pencapaian siswa terhadap SKL bias

- Sumatif
- Kelas 9, 12
- Sensus
- Oleh pemerintah
- Ranah pengetahuan
- Rapor Mutu yang terstandar antar wilayah, satuan pendidikan, siswa

Penilaian eksternal

- *Progress monitoring* & evaluasi
- Kelas 2,4,8,10
- Survey atau sensus
- Tahunan
- Oleh pemerintah
- AKSI survey

Inspiring a proper formative assessment: AKSI *for* School

17. Bahasa - NARASI
Pertanyaan 17 / 20
NARASI1_17
Lihat Pedoman

Gunakan menu drag and drop!

Pasangkan enam tokoh dari kedua teks fabel berikut berdasarkan kemiripan peran setiap tokoh.

Kadal	Drag di sini!
Ular	Drag di sini!
Alap-alap	Drag di sini!

Kadal dan Ular Air   Singa dan Tikus

Kadal dan Ular Air

https://kumbercer.blogspot.com/
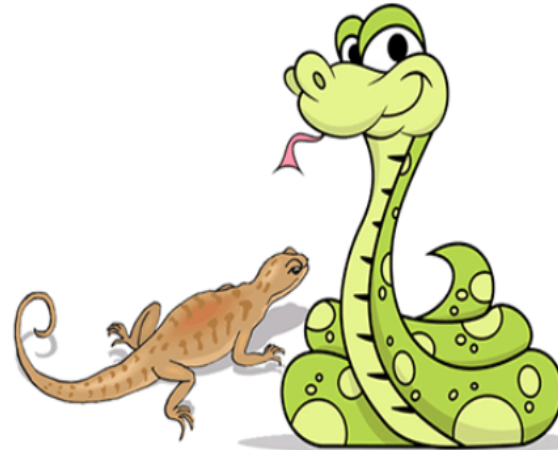
Ketika itu ular air melihat kehadiran sang kadal, lalu mendekatinya. Setelah sampai dekat dengan sang kadal, ular itu meninggikan kepalanya dan berkata"Apa yang sedang dilakukan oleh seekor kadal gemuk ini dipinggiran kolam?". Kadal itu terkejut dan menjauh dari sang ular "Aku hanya sedang mencari kegiatan baru, aku hanya ingin mencari sebuah petualangan", kata sang kadal. "Kenapa kau menghindar dariku? Aku tidak akan memakanmu. Aku sudah kenyang memakan ikan kecil yang

Kadal dan Ular Air   Singa dan Tikus

Persahabatan Singa dengan Tikus

http://dongengceritarakyat.com

Di sebuah hutan yang lebat hiduplah seekor singa perkasa yang semua makhluk lain sangat takut kepadanya. Raja hutan tersebut dikenal sangat mengerikan. Tidak ada makhluk hidup yang ada di hutan berani mendekati sarangnya terutama saat ia sedang tidur. Binatang perkasa itu sangatlah marah jika tidurnya terganggu dengan cara apapun.

Tapi suatu hari tikus kecil sangat penasaran ingin melihat bagaimana bentuk sarang Singa si Raja hutan. Dengan niat yang bulat dia berangkat ke gua dimana singa biasa beristirahat. Sayangnya, ketika sampai, tikus kecil tidak melihat adanya sang Raja hutan."Dia pergi ke suatu tempat. Apakah dia akan segera kembali?" Timbul pertanyaan dalam hati si Tikus kecil. Untuk mengobati rasa penasarannya si Tikus kecil masuk
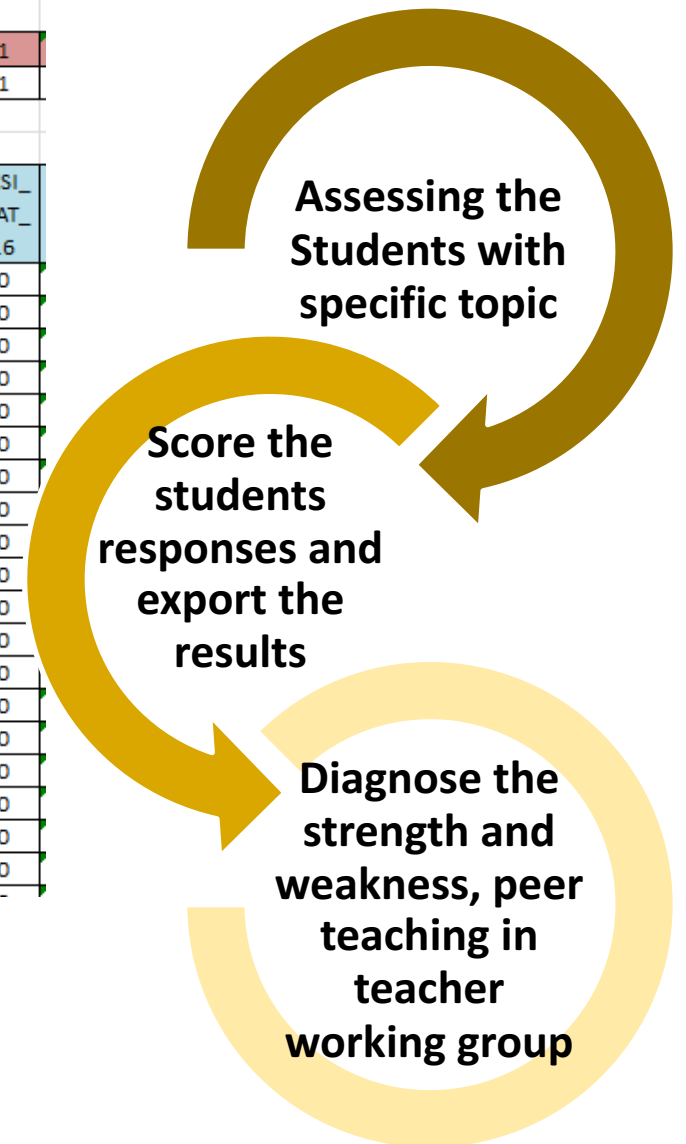
Adopt and adapt the new framework of reading literacy that elaborate navigation skills. 20% of items in AKSI for school have multiscreen and hyperlink stimulus. Although the length of the text is shorter than PISA standard.

Strengthening Teacher Capacity to Analyze and Make use of Assessment Results

KEY	B	D	A	1	1	2	1	D	2	1	1	D	1	D	2	1
	1	1	1	1	1	2	1	1	2	1	1	1	1	1	2	1

Nama Siswa	AKSI_MAT_01	AKSI_MAT_02	AKSI_MAT_03	AKSI_MAT_04	AKSI_MAT_05	AKSI_MAT_06	AKSI_MAT_07	AKSI_MAT_08	AKSI_MAT_09	AKSI_MAT_10	AKSI_MAT_11	AKSI_MAT_12	AKSI_MAT_13	AKSI_MAT_14	AKSI_MAT_15	AKSI_MAT_16
RIKKI KURNIAWAN	B	C	A	1	0	0	0	B	1	0	0	D	0	A	2	0
BIMANTARA KUSUMA DEW	A	D	C	1	1	0	0	D	1	0	0	D	0	C	0	0
BAGAS SEPTIAN CHALIM	C	D	A	1	1	9	0	C	0	1	0	A	1	B	2	0
NI MADE PRIYAMKA ARMA	A	D	A	1	0	0	0	D	1	1	0	D	1	D	0	0
ANGELINA JENI SANTOSO	A	D	C	0	0	9	0	D	1	0	0	D	1	B	2	0
BERLIANA RAMADHANI	A	D	A	1	0	9	0	A	0	1	0	D	1	C	1	0
MIA RATRI PRAMUDITHA	A	D	A	1	0	9	0	A	2	1	0	D	1	C	1	0
SHEILA SYAM IBRAHIM	A	D	A	0	0	9	0	D	1	1	0	D	1	C	1	0
ANINDIA AULIA SYAFITRI	B	C	A	1	0	0	0	A	1	0	0	D	0	B	2	0
FIFI ARIE RAMAYANTI	B	D	A	1	1	0	0	D	0	0	0	D	1	C	2	0
SEFHIA ISTNAINI NOR FAD	B	D	A	1	1	0	0	C	2	1	0	D	0	B	2	0
ANGGRIANI DWI LESTARI	B	D	A	0	0	0	0	C	1	1	1	D	1	B	2	0
RISMAWATI DEWI	B	D	A	0	0	0	0	C	2	1	0	D	0	D	2	0
ALIFIA KHOLISATUL FAIZAH	B	D	A	0	1	0	0	D	2	1	0	D	1	A	2	0
SALSABILAH PUTRI WIDIHA	B	D	A	0	1	0	0	D	2	1	0	D	1	A	2	0
AURELLIA ZASKIA WULAND	A	A	A	0	1	0	0	D	2	1	0	D	1	D	2	0
FINTA NUR AZIZAH	A	A	A	0	0	0	0	D	1	0	1	D	1	D	2	0
OKTAVIA AMANDA PRATIW	A	B	A	0	0	0	0	D	2	1	0	D	0	A	2	0
ARTANTI RACHMADANI	B	D	A	1	1	9	0	D	1	1	0	D	1	C	2	0

Example of Spreadsheet Exported from AKSI for School Application

Assessing the Students with specific topic

Score the students responses and export the results

Diagnose the strength and weakness, peer teaching in teacher working group

Let's move on

(3)
Diagnose and find valid feedback

On Target Strategy for Improvement

Persentasi Siswa Provinsi DI Yogyakarta yang Menjawab Benar

			Prov	Nas
		Cakupan Materi: 4-Stasistika dan Peluang	64.38	45.71
36	3.1,IX/1 ; 3.11,IX	Menentukan median dr n buah data tidak berurutan (15 < n < 20).	75.82	53.41
37	3.1,IX/1 ; 3.11,IX	Menentukan rata-rata nilai data yang lain jika rata-rata nilai n data keseluruhan dan rata-rata nilai data seorang	45.72	35.17
38	3.2,IX/1 ; 3.11,IX	Menentukan Jumlah data tertentu jika unsur yang diperlukan diketahui.	69.48	46.15
39	3.2,IX/1 ; 3.11,IX	Menentukan frekuensi batang yang belum diketahui, jika jumlah semua data ditentukan.	86.76	62.51
40	4.1,IX/1 ; 3.10,IX	Menentukan peluang terambilnya bola bernomor genap/ganjil/prima pada pengambilan bola	44.12	31.32

Kep Riau	Kota Batam	Kab. Natuna	Kep. Anambas
46.41	51.04	33.55	32.56
58.95	66.37	42.06	43.54
28.34	29.96	19.79	25.85
52.34			
	59.13	37.43	34.64
60.50	65.35	43.29	35.98
31.93	34.40	25.20	22.81

Indikator soal "Menentukan frekuensi batang yang belum diketahui, jika jumlah semua data ditentukan" sudah dikuasai oleh siswa DIY (86,76%), namun di beberapa kabupaten di provinsi Kepulauan Riau soal ini belum dikuasai, misal di kepulauan Anambas hanya 35,98% bisa menjawab benar. Berbeda dengan kota Batam yang relatif lebih baik pencapaiannya. Penguatan kompetensi matematika yang bersifat sederhana diperlukan untuk siswa di Kepulauan Anambas.

Tailored Training: one size doesn't fit all

Provinsi : 30 - BANTEN (7349 Siswa)   Mata Ujian : **EKONOMI**
Kota/Kab. : 02 - KOTA TANGERANG (831 Siswa)
Sekolah : 001 - SMA NEGERI 1 TANGERANG (5 Siswa)

No. Urut	Kemampuan Yang Diuji	Sekolah	Kota/ Kab.	Prop	Nas
1	Konsep Ekonomi	50.00	46.42	44.84	49.95
2	Konsep Pembangunan	63.33	48.18	44.68	50.66
3	Manajemen Perekonomian Internasional	74.29	47.89	44.31	49.98
4	Akuntansi Perusahaan Jasa	66.67	47.57	44.70	50.06
5	Akuntansi Perusahaan Dagang	74.29	48.77	46.43	50.75

Provinsi : 30 - BANTEN (7349 Siswa)   Mata Ujian : **EKONOMI**
Kota/Kab. : 02 - KOTA TANGERANG (831 Siswa)
Sekolah : 008 - SMA DHARMA PUTRA (25 Siswa)

No. Urut	Kemampuan Yang Diuji	Sekolah	Kota/ Kab.	Prop	Nas
1	Konsep Ekonomi	56.00	46.42	44.84	49.95
2	Konsep Pembangunan	58.33	48.18	44.68	50.66
3	Manajemen Perekonomian Internasional	56.00	47.89	44.31	49.98
4	Akuntansi Perusahaan Jasa	53.33	47.57	44.70	50.06
5	Akuntansi Perusahaan Dagang	61.14	48.77	46.43	50.75

Provinsi : 30 - BANTEN (7349 Siswa)   Mata Ujian : **EKONOMI**
Kota/Kab. : 02 - KOTA TANGERANG (831 Siswa)
Sekolah : 029 - SMA NEGERI 3 TANGERANG (20 Siswa)

No. Urut	Kemampuan Yang Diuji	Sekolah	Kota/ Kab.	Prop	Nas
1	Konsep Ekonomi	58.75	46.42	44.84	49.95
2	Konsep Pembangunan	62.08	48.18	44.68	50.66
3	Manajemen Perekonomian Internasional	56.43	47.89	44.31	49.98
4	Akuntansi Perusahaan Jasa	59.17	47.57	44.70	50.06
5	Akuntansi Perusahaan Dagang	54.29	48.77	46.43	50.75

National exam reports provide information about what topics need improvement. The information is available in school, district, province and national level to identify particular subject, topic and item that need to be improved
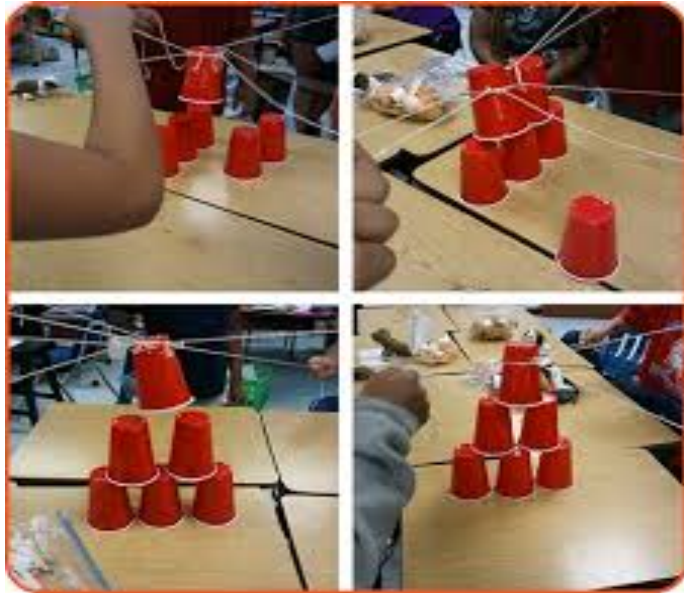
Let's move on

(4)

Focus on learning performance,
NOT rules compliance

Creativity on Teaching and Learning

Role play

Problem solving

Social Life

Creativity on Teaching and Learning

Creative Display

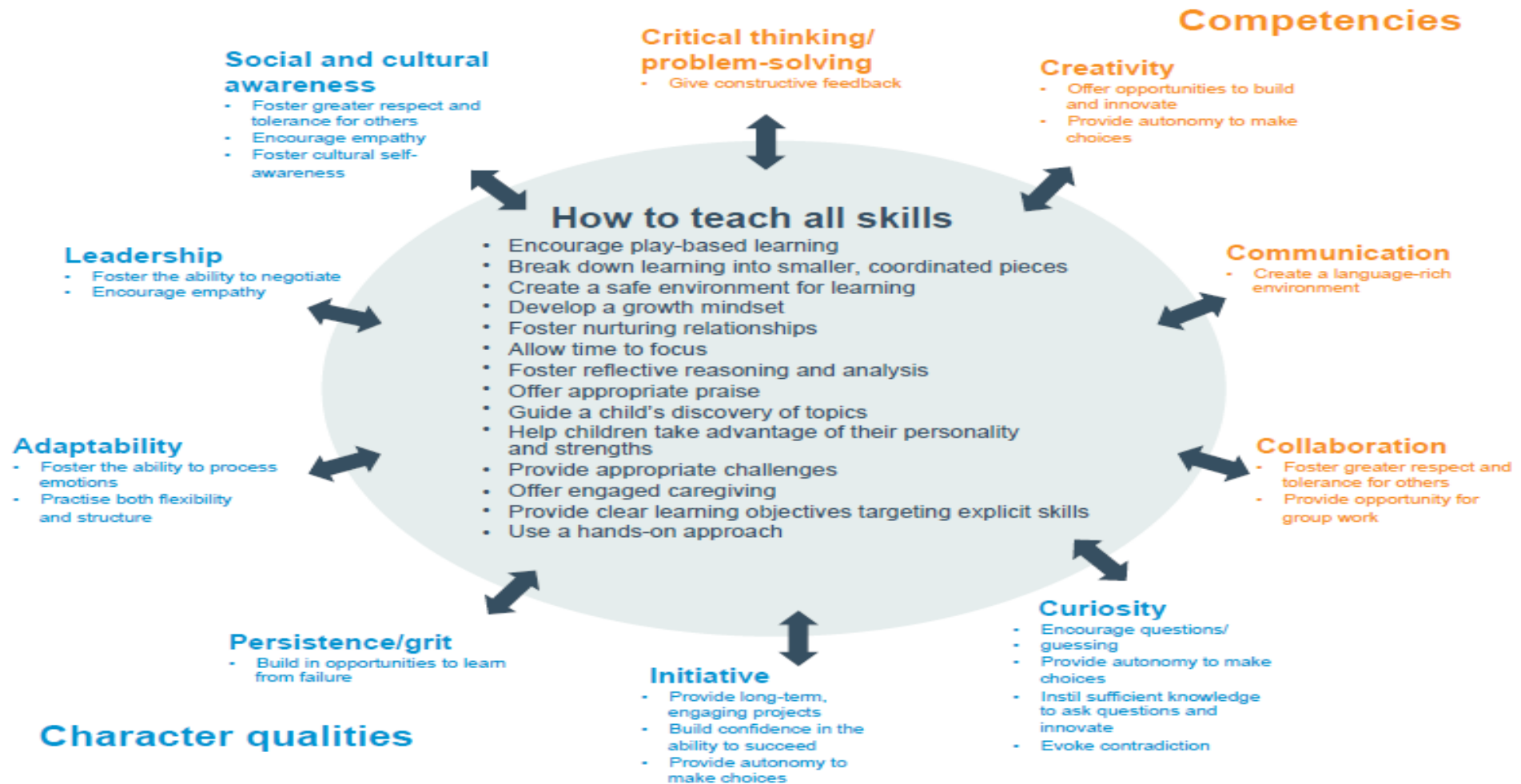# Creativity on Teaching and Learning

Not all teachable but catchable:

Teaching strategy should not only for cognitive growth but also for Social emotional skills development

Exhibit 3: A variety of general and targeted learning strategies foster social and emotional skills

Competencies

Social and cultural awareness
- Foster greater respect and tolerance for others
- Encourage empathy
- Foster cultural self-awareness

Critical thinking/ problem-solving
- Give constructive feedback

Creativity
- Offer opportunities to build and innovate
- Provide autonomy to make choices

How to teach all skills
- Encourage play-based learning
- Break down learning into smaller, coordinated pieces
- Create a safe environment for learning
- Develop a growth mindset
- Foster nurturing relationships
- Allow time to focus
- Foster reflective reasoning and analysis
- Offer appropriate praise
- Guide a child's discovery of topics
- Help children take advantage of their personality and strengths
- Provide appropriate challenges
- Offer engaged caregiving
- Provide clear learning objectives targeting explicit skills
- Use a hands-on approach

Leadership
- Foster the ability to negotiate
- Encourage empathy

Communication
- Create a language-rich environment

Adaptability
- Foster the ability to process emotions
- Practise both flexibility and structure

Collaboration
- Foster greater respect and tolerance for others
- Provide opportunity for group work

Persistence/grit
- Build in opportunities to learn from failure

Initiative
- Provide long-term, engaging projects
- Build confidence in the ability to succeed
- Provide autonomy to make choices

Curiosity
- Encourage questions/ guessing
- Provide autonomy to make choices
- Instil sufficient knowledge to ask questions and innovate
- Evoke contradiction

Character qualities

"Pendidikan adalah daya upaya untuk memajukan bertumbuhnya **budi pekerti** (karakter) **pikiran** (intelek-kompetensi) dan **tubuh anak** (keterampilan-literasi). Bagian-bagian itu tidak boleh dipisahkan agar kita dapat memajukan kesempurnaan hidup anak-anak kita".

Ki Hajar Dewantara

Thank You