Philippines Nation's English Report Card: *Preliminary Findings (2015-2016)* - *What does this mean during the 4th industrial Revolution?*

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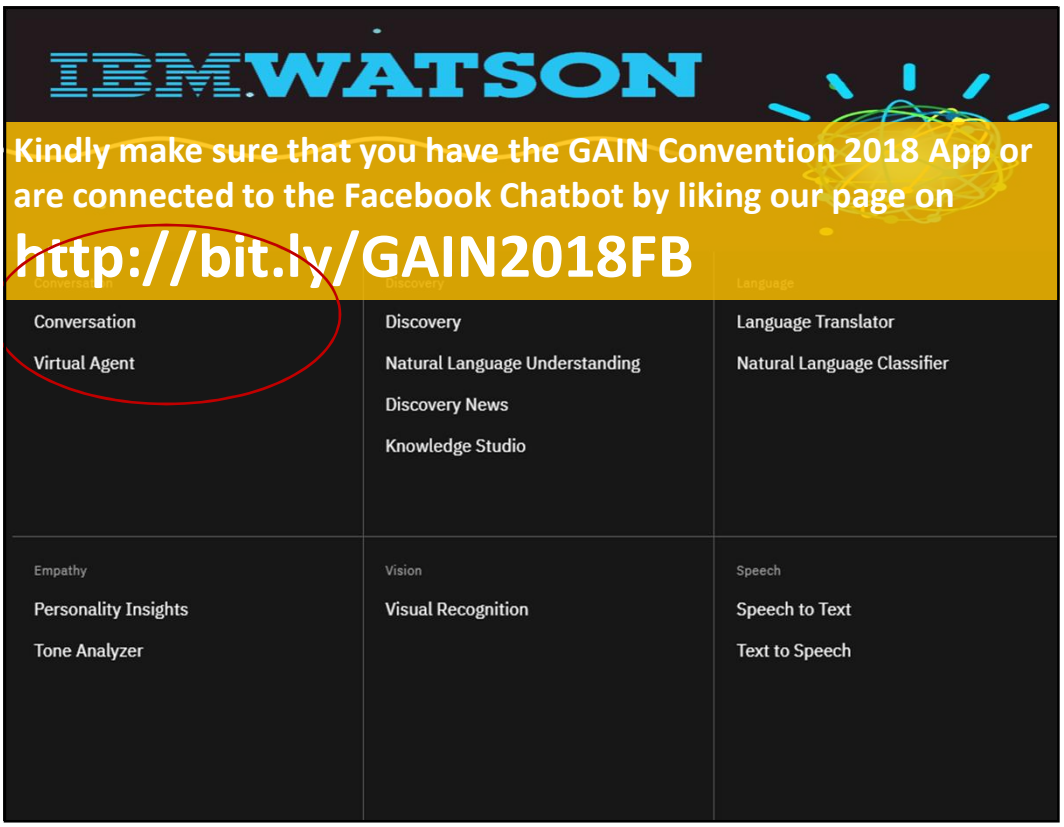

Overview

- **Part 1 – Current state of Artificial Intelligence and Automation**
- Part 2 – The Nations English Report Card – the results *(How prepared are we?)*
- Part 3 – Moving forward
- Q&A

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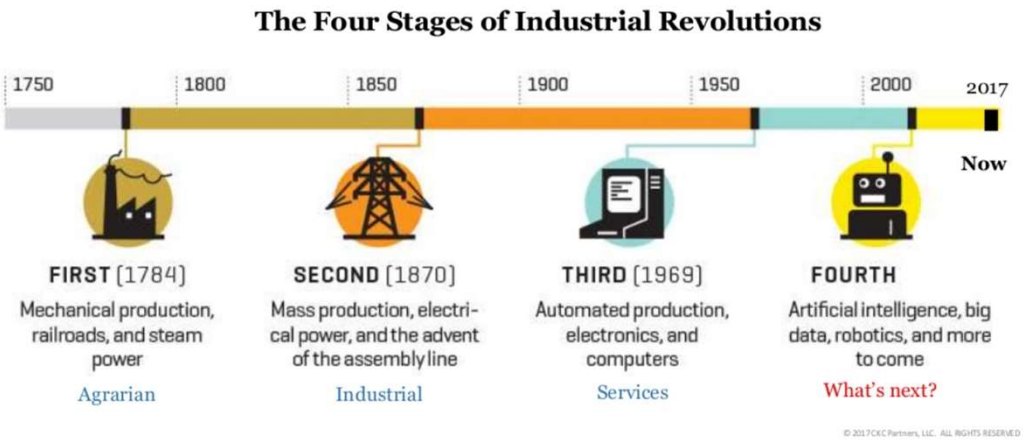
Before we look to the future....a quick look at the journey of how we got here



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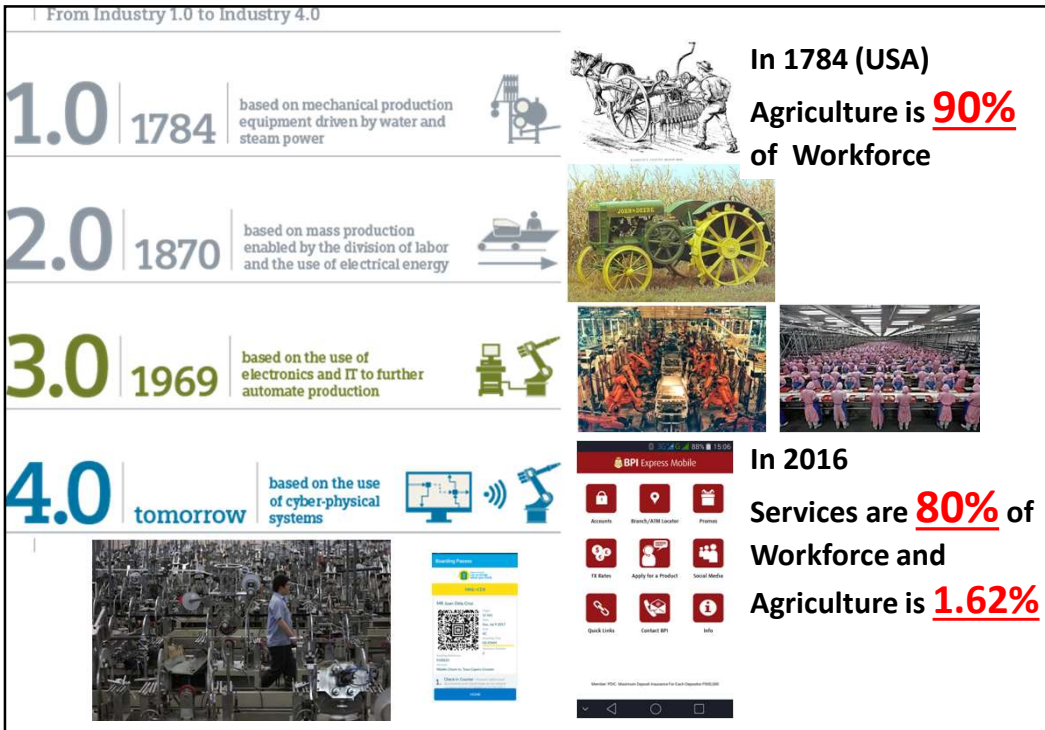


Automation has been happening for 300 years - Displaced labor had to flee into new sectors in every revolution – the question is to where will they flee now?

What is Artificial Intelligence / Machine Learning?

Machine Learning = Learning from existing data / Making sense of existing data (e.g. Linear Regression)

What Machine Learning Can Do

A simple way to think about supervised learning.

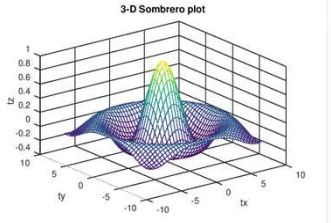
INPUT A	RESPONSE B	APPLICATION
Picture	Are there human faces? (0 or 1)	Photo tagging
Loan application	Will they repay the loan? (0 or 1)	Loan approvals
Ad plus user information	Will user click on ad? (0 or 1)	Targeted online ads
Audio clip	Transcript of audio clip	Speech recognition
English sentence	French sentence	Language translation
Sensors from hard disk, plane engine, etc.	Is it about to fail?	Preventive maintenance
Car camera and other sensors	Position of other cars	Self-driving cars

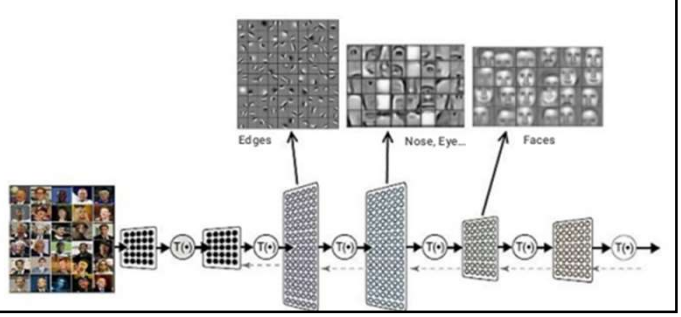
SOURCE ANDREW NG © HBR.ORG

What is Deep learning and AI?

When you increase the complexity (how deep it is). It is the same as adding more dimensions (e.g. Higher order polynomials – or more variables). Instead of (x +y) only – use $(x+y+2z)^3$

$$= x^3 + 3x^2y + 6x^2z + 3xy^2 + 12xyz + 12xz^2 + y^3 + 6y^2z + 12yz^2 + 8z^3$$





Where AI works very well

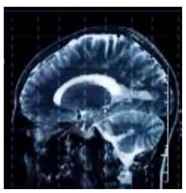
Jobs that are very repetitive (where people act like robots) despite high complexity/technical needs (AI shines with high knowledge needs – e.g. 500K medical records, 1 million law records)

Google Translate
Knows 50+ languages
Translates the same characters

Facebook Airline Chatbot
Can book to 100+ different airlines. **Same scripted** transaction

Medical Diagnosis
Looking at 1,000+ illnesses
Same diagnosis procedure

Skinvision App
Diagnose skin conditions



IBM Watson
Detect Cancer
CT Scan / X-ray

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Experience AI and Automation

Automation = Using the GAIN Convention 2018 App (No need to ask a person for directions, etc).

FB Chatbot here: http://bit.ly/GAIN2018FB

AI = Try chatting with the AI Chatbot on the App or the Facebook Chatbot

"Where is the event?"

"What is my account balance?" (FAKE)

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Online Quiz (Who is more likely to be impacted by Automation / AI)

Choice (A)	Choice (B)
Travel Agent who knows how to book to 100+ cheap airlines	Travel Agent who knows how to customize trip based on experiences / likes of customer
Customer oriented Taxi driver who gives a 5-star experience but only 15 trips per day	Efficient Taxi Driver who can have 50 trips per day
Oncologist who manages a treatment plan based on the diagnosis and the emotional needs of the patient	Oncologist who specializes in diagnosis and knows 1,000+ diseases with 30+ years of experience
Lawyer who is able to strategize and deal with both parties and negotiate settlement claims	Lawyer who has deep knowledge in only one area of the law e.g. Insurance claims
A double degree Ph.D. Holder who teaches complex and technical topics	A teacher who accesses the latest online lectures for technical material but guides/inspires/empowers students

Start the Online Quiz

By:

(1) Going to this web link: http://bit.ly/GAIN2018

(2) Messaging the GAIN Facebook Page with "Start the survey" http://bit.ly/GAIN2018FB

(3) Going to the Start the Online Quiz on the GAIN 2018 App

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View Results Online Real time

Open Link Online

http://bit.ly/GAINRESULT

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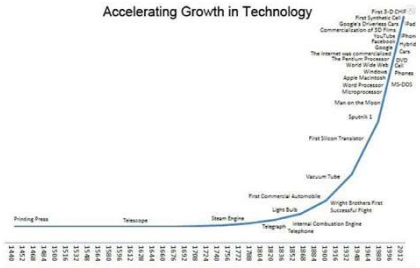
What's so important about the 4th industrial revolution? How to assess readiness?



- **Exponential Pace of change:** Rapid automation, price changes, increases in knowledge
- **21st century skills for tomorrow (4C's, P21.org) –** Creativity, Critical Thinking, Collaboration, Communication Skills
- Which of the 21st century skills is most linked to the Philippine economy **today?** Our largest sectors are OFW Remittances, IT-BPM and Tourism?

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Communication Skills correlated with 4C's

(Psychometrics also better: Creativity/Collaboration are self-rated or human-rated which may have rater-reliability or norm related biases; Critical thinking and IQ are also not the same – difficult to assess)

CEFR **C1-C2 (Proficient)**	Can understand and **interpret critically** virtually all forms of the written language. Can write clear, well-structured texts of **complex subjects**, underlining the relevant salient issues, **expanding and supporting points of view** at some length with subsidiary points, reasons and relevant examples, and rounding off with an appropriate conclusion.
CEFR **A1-A2 (Beginner)**	Can understand short, simple texts containing the highest frequency vocabulary, including a proportion of shared international vocabulary items. Can write a series of simple phrases and sentences linked with simple connectors like "and", "but" and "because".

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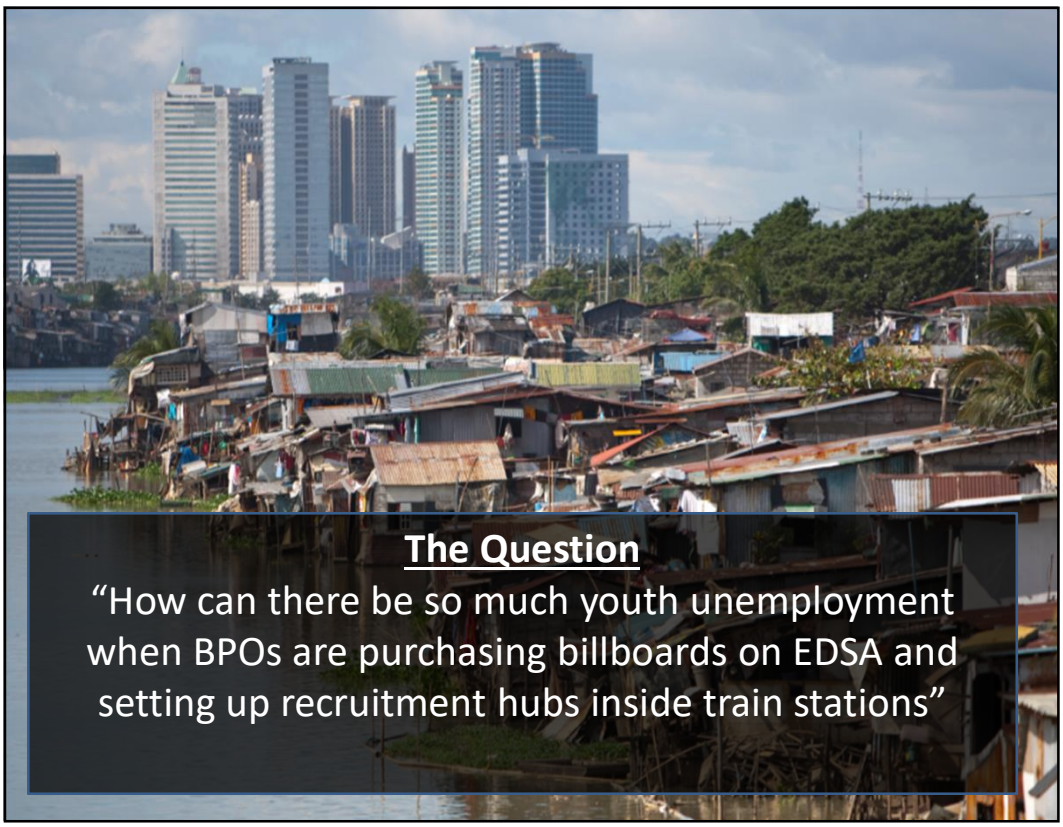

Research Stats

- Sampling size calculated to confidence level of 95% (**N=10,145** samples taken which is over the recommended sampling size by over **10x**). SWS during elections uses **N=1,200**
- Random sampling without replacement
- English tests used have the highest reliability, validity, consistency in the world (internal consistency of > .91) administered under secure and proctored conditions

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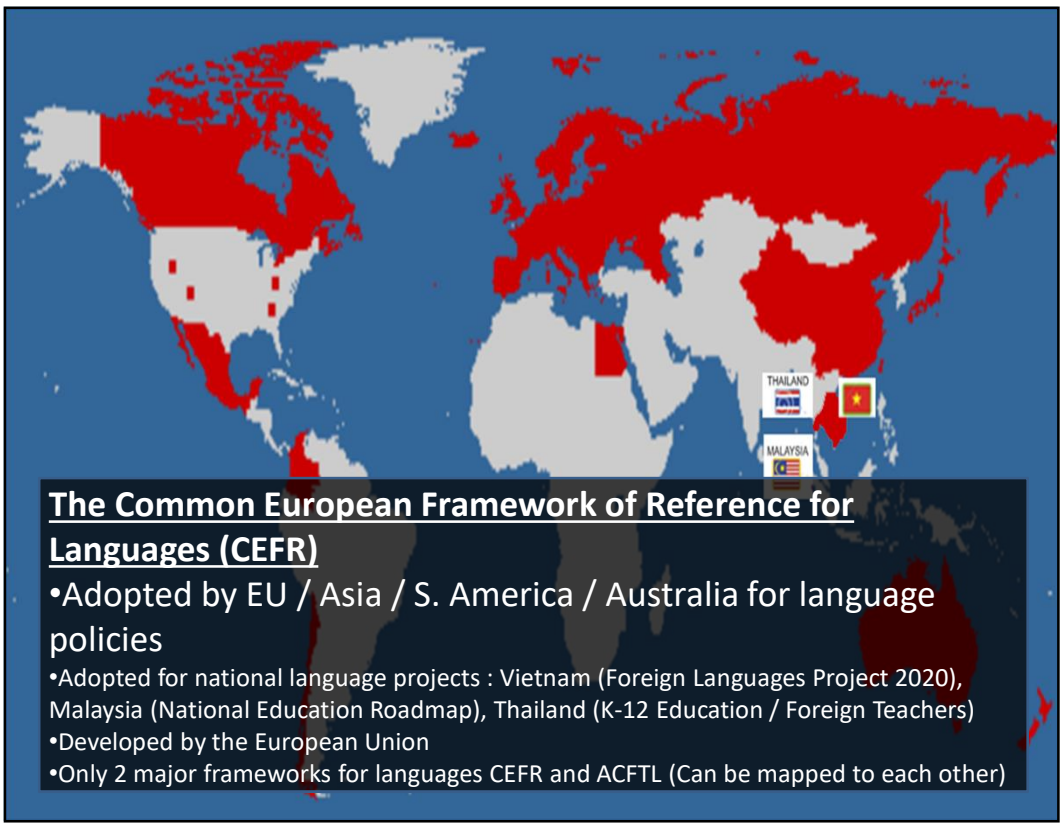
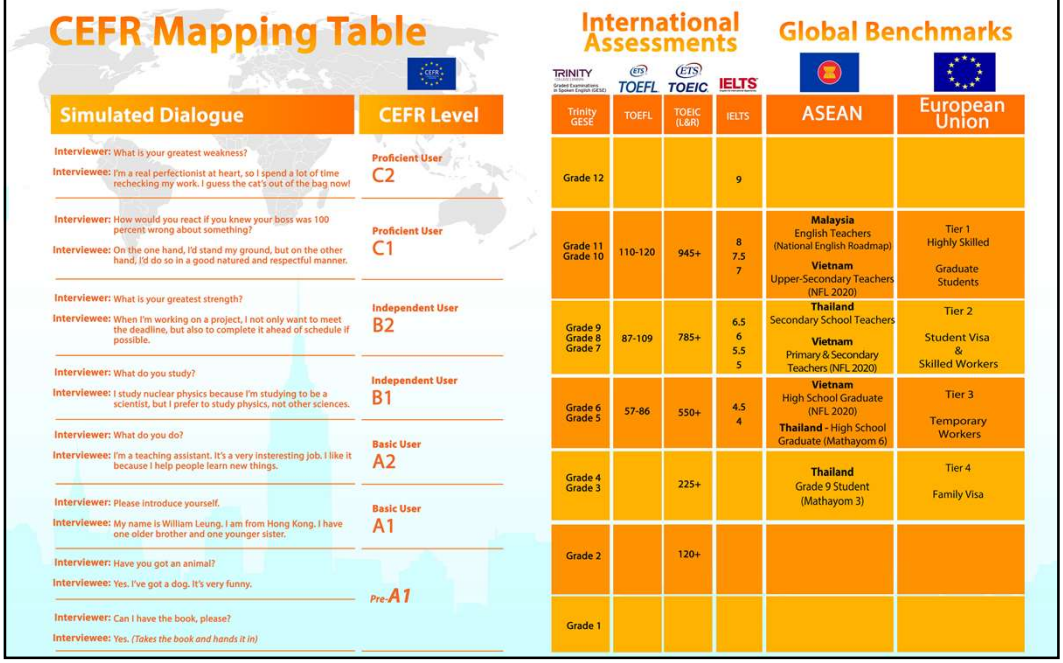


The Common European Framework of Reference for Languages (CEFR)

- Adopted by EU / Asia / S. America / Australia for language policies
- Adopted for national language projects : Vietnam (Foreign Languages Project 2020), Malaysia (National Education Roadmap), Thailand (K-12 Education / Foreign Teachers)
- Developed by the European Union
- Only 2 major frameworks for languages CEFR and ACFTL (Can be mapped to each other)

Common European Framework of Reference for Languages (CEFR)



Common European Framework of Reference for Languages (CEFR) with TOEIC tests

TOTAL minimum TOEIC® scores (10 to 990 pts)	Europeans CEFR levels		CEFR General Description
945 pts	Proficient user - Effective Operational Proficiency	C1	Can understand a wide range of demanding, longer texts, and recognise implicit meaning. Can express him/herself fluently and spontaneously without much obvious searching for expressions. Can use language flexibly and effectively for social, academic and professional purposes. Can produce clear, well-structured, detailed text on complex subjects, showing controlled use of organisational patterns, connectors and cohesive devices.
785 pts	Independent user - Vantage	B2	Can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialisation. Can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.
550 pts	Independent user - Threshold	B1	Can understand the main points of clear standard input on familiar matters regularly encountered in work, school, leisure, etc. Can deal with most situations likely to arise whilst travelling in an area where the language is spoken. Can produce simple connected text on topics which are familiar or of personal interest. Can describe experiences and events, dreams, hopes and ambitions and briefly give reasons and explanations for opinions and plans.
225 pts	Basic user - Waystage	A2	Can understand sentences and frequently used expressions related to areas of most immediate relevance (e.g. very basic personal and family information, shopping, local geography, employment). Can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters. Can describe in simple terms aspects of his/her background, immediate environment and matters in areas of immediate need.
120 pts	Basic user - Breakthrough	A1	Can understand and use familiar everyday expressions and very basic phrases aimed at the satisfaction of needs of a concrete type. Can introduce him/herself and others and can ask and answer questions about personal details such as where he/she lives, people he/she knows and things he/she has. Can interact in a simple way provided the other person talks slowly and clearly and is prepared to help.

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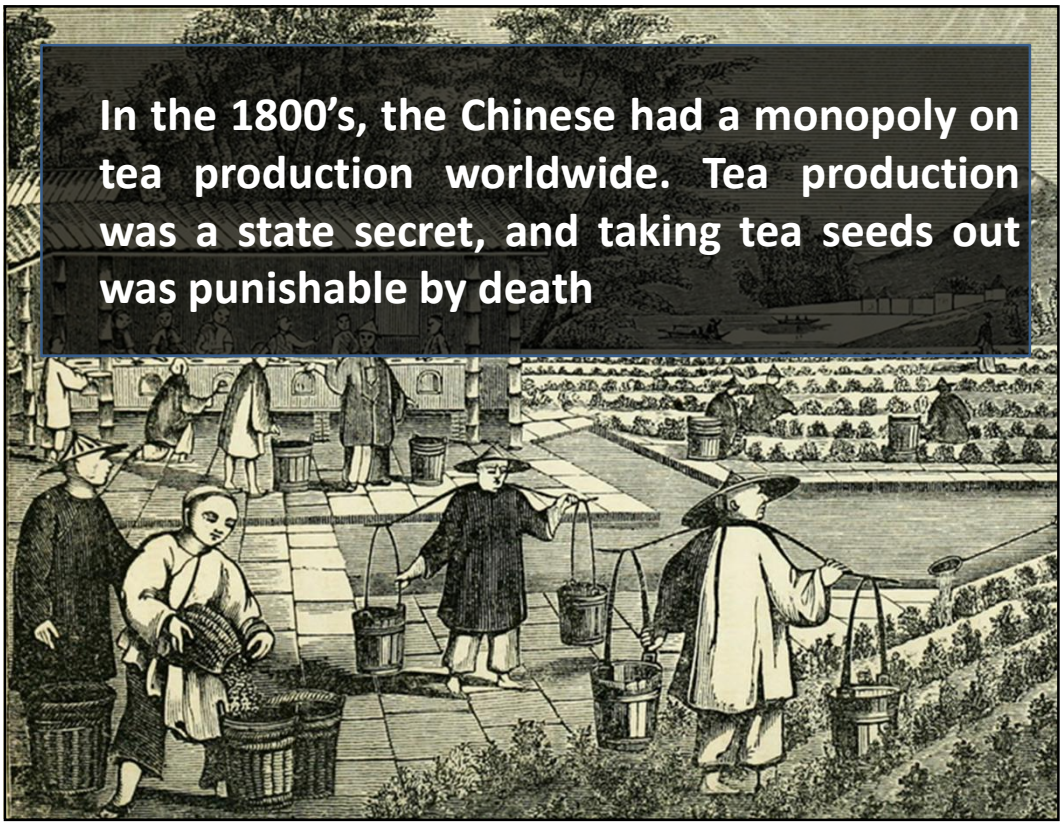
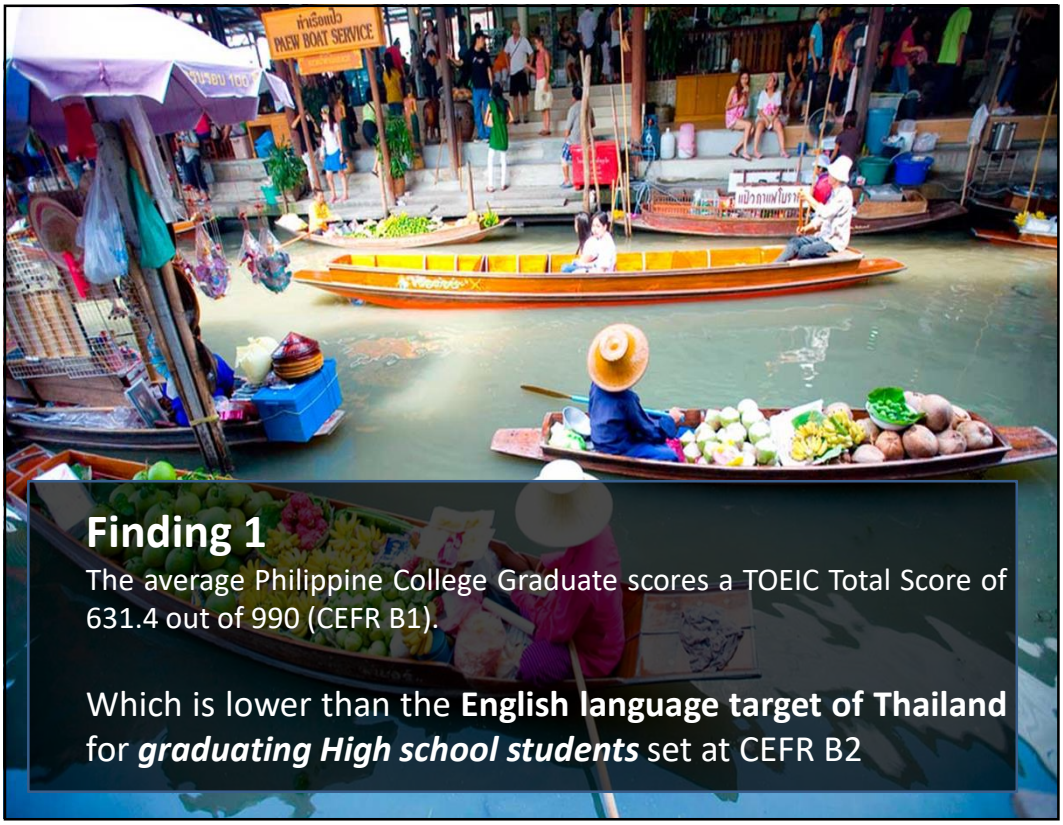

In the 1800's, the Chinese had a monopoly on tea production worldwide. Tea production was a state secret, and taking tea seeds out was punishable by death


PAEW BOAT SERVICE
Finding 1
The average Philippine College Graduate scores a TOEIC Total Score of 631.4 out of 990 (CEFR B1).
Which is lower than the English language target of Thailand for graduating High school students set at CEFR B2

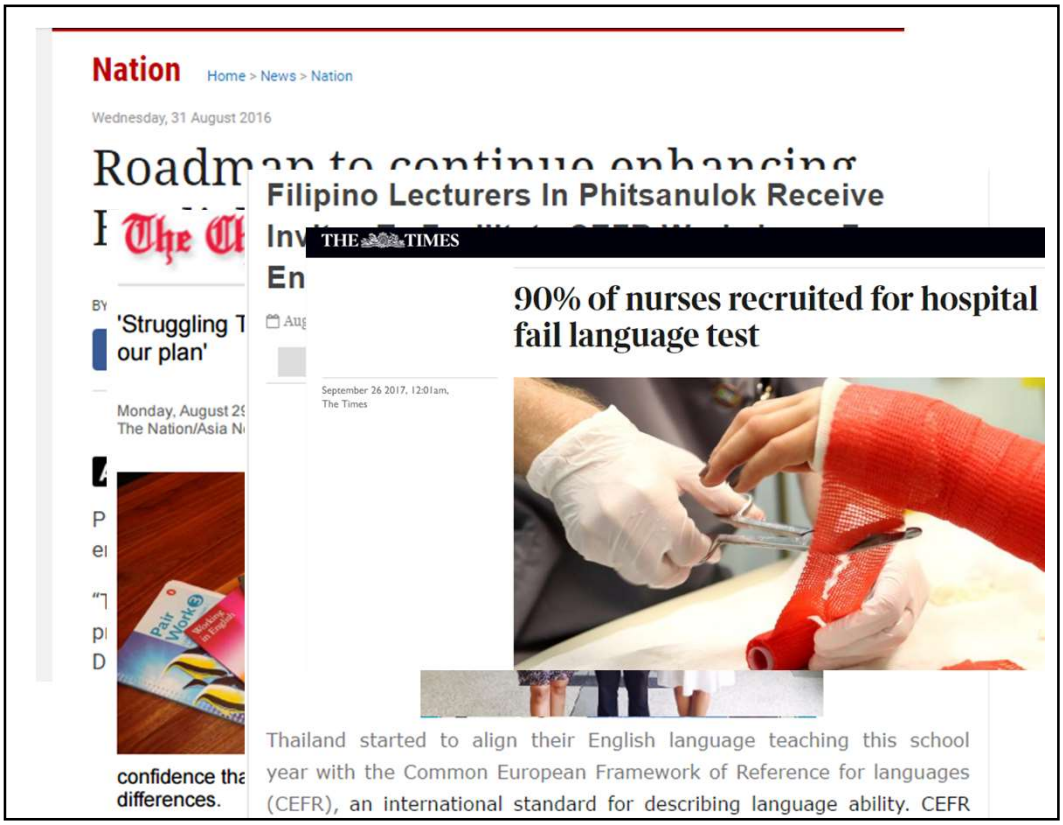
Standard Name	Country	TOEIC L&R Total Score	CEFR Equivalent	Estimated Upper-bound of Percentage of Graduating students who meet Benchmark (Using Z-scores and Percentiles)
Thailand Standard for High School Graduates	Ministry of Education Thailand	785	B2	18.1%
Vietnam Standard for High School Teachers	Ministry of Education Vietnam	785	B2	18.1%
Highly Skilled Visa / Graduate Students	European Union	945	C1	3.2%
Malaysia Standard for English Teachers	Malaysia Education Ministry	945	C1	3.2%

Finding 2

The current English proficiency score of a Philippine college graduate is similar to that of an English Speaking Taxi Driver in Tokyo, Japan.

Position Name	Company	TOEIC L&R Total Score	CEFR Equivalent	Estimated Upper-bound of Percentage of Graduating students who meet Benchmark (Using Z-scores and Percentiles)
Front Office	Dusit Thani Manila (Source: PMAP Study)	820	B2	13.5%
Food and Beverage, Kitchen	Waterfront Hotel Cebu (Source: PMAP Study)	750	B1	24%
Front Office & Events Management	Marriott Manila (Source: PMAP Study)	850	B2	9.85%
Customer Care	Startek (Source: PMAP Study)	850	B2	9.85%
Engineering	EEI Corporation (Source: PMAP Study)	700	B1	34.23%
Taxi Driver (English Speaking)	Tokyo Taxi Association (Japan) (Source: Nikkei, 2016)	600	B1	57.14%
International Professional (UNHCR)	United Nations (Source: United Nations, 2016)	945	C1	3.2%

30 years ago, we taught Vietnam and Thailand how to farm rice. Now we import over 1 million metric tons (Imagine 500,000 elephants)
Now we're teaching them English..


Nation
Home > News > Nation
Wednesday, 31 August 2016
Filipino Lecturers In Phitsanulok Receive
THE TIMES
90% of nurses recruited for hospital fail language test
September 26 2017, 12:01am, The Times
Thailand started to align their English language teaching this school year with the Common European Framework of Reference for languages (CEFR), an international standard for describing language ability. CEFR
'Struggling
our plan'
Monday, August
The Nation/Asia
confidence tha
differences.

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The Ed Tech Market Map
Learning Management Systems
Early Childhood Education
Broad Online Learning Platforms
Enterprise Learning
Next-Gen Schools
Tech Learning
Free Learning is already here – now we just need standards!
Language Learning
School Administration
Search
Test Prep

“Motivation is the single biggest problem people have when learning a language”
duolingo
-Luis von Ahn (CEO of Duolingo)

Recommendation 1

Government officials and Accreditation Committees to set standards and/or outcomes at or above our ASEAN neighbors such as a CEFR B2 English level

[Measure: Number of Government institutions / Accreditation Bodies using CEFR standards]

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Recommendation 2

Universities to require students/teachers reach a CEFR B2 English standard prior graduation/regularization and come up with relevant intervention programs *(including structural changes such as increasing hours)*

[Measure: Number of Universities with a CEFR B2 exit requirement]

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Recommendation 3

Industry associations such as IBPAP, PMAP, CCAP or well-known employers to prefer or require a CEFR B2 English level

*[Measure: Number of Associations or Corporations who **publicly** use CEFR B2 in their Hiring / Promotion / Training Policies]*

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Recommendation 4

Law to be passed that requires certain degree programs to reach the CEFR B2 English standard

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Recommendations

For the Philippines to maintain its competitive advantage in English proficiency:

1. Government officials and Accreditation Committees to set standards and/or outcomes at or above our ASEAN neighbors such as a CEFR B2 English level

2. Universities to require students reach a CEFR B2 English standard prior graduation and come up with relevant intervention programs (including structural changes such as increasing hours)

3. Industry associations such as IBPAP, PMAP, CCAP or well-known employers to prefer or require a CEFR B2 English level

4. Law to be passed that requires certain degree programs to reach the CEFR B2 English standard

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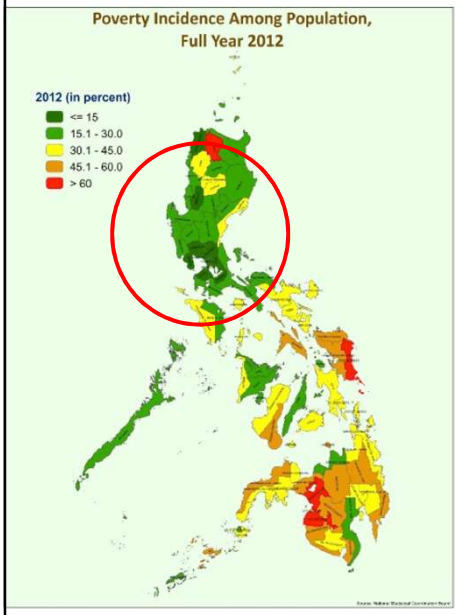

FAQ 1 – Sampling? Bias?

10,000 Students randomly selected, institutions not randomly (volunteer schools – likely to be higher quality Universities). Sample is also taken from 'Richest' regions in the Philippines

Most likely an estimate of 'upper bound' or 'best case scenario' – if sample expanded to include poorer areas – scores would likely be lower

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FAQ 2– Comparison set

Why did the study focus on graduating students?

The study wanted to explore both industry-academe gap and student outcomes against international standards. We decided to focus data collection in Higher Education, because the many of the top Universities (3 QS accredited Universities) already take the TOEIC tests in the Philippines – so the data gathering was much easier, as we only had to expand to include Government Universities to fit the research sponsorship budget given by the Educational Testing Service

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FAQ 3– Decline of English

We've known about the decline in English for the past 20 years?

In the past 20 years – nearly every other country improved in English. 20 years ago – in Hong Kong, Shopkeepers could only communicate in sign language, now they can transact in English.

If a stock broker was losing money in the biggest bull market where 98% are earning – that would be classified as extremely poor performance. Knowing about the issue for 20 years and not doing anything about it – makes every following year successively strange (for inaction).

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Summary

- The 4th industrial revolution is about a fast-rapid change to emerging technologies such as Artificial Intelligence. It will be 'human' skills or 'soft' skills that set humans apart from machines (not deep technical knowledge). Communication skills can be used to measure directly & indirectly the readiness of the workforce as it is a key skill for the 4th industrial revolution and indirectly measures other C's (Creativity, Critical Thinking)
- English language proficiency of the Philippines is deteriorating (slowly but surely) - one of the few countries in the world declining (most others catching up). Current English language proficiency of College graduates (CEFR B1 – TOEIC 550) is lower than the target of Thailand for High School Graduates (CEFR B2 – TOEIC 785)
- Need for common & shared standards across Government, Academe and Industry to ensure skills alignment

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QUESTIONS?

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Benchmarks around ASEAN

Vietnam on-track with National Foreign Languages Project 2020 – B1 for University Graduates (**TOEIC® 550**), B2 – Secondary School Teachers (**TOEIC® 785**)

Thailand Ministry of Education requiring all teachers (who teach in English) to have a **TOEIC®** score of **550** above

Indonesia Ministry of National Education selected **TOEIC®** to evaluate Indonesian teachers in English Proficiency

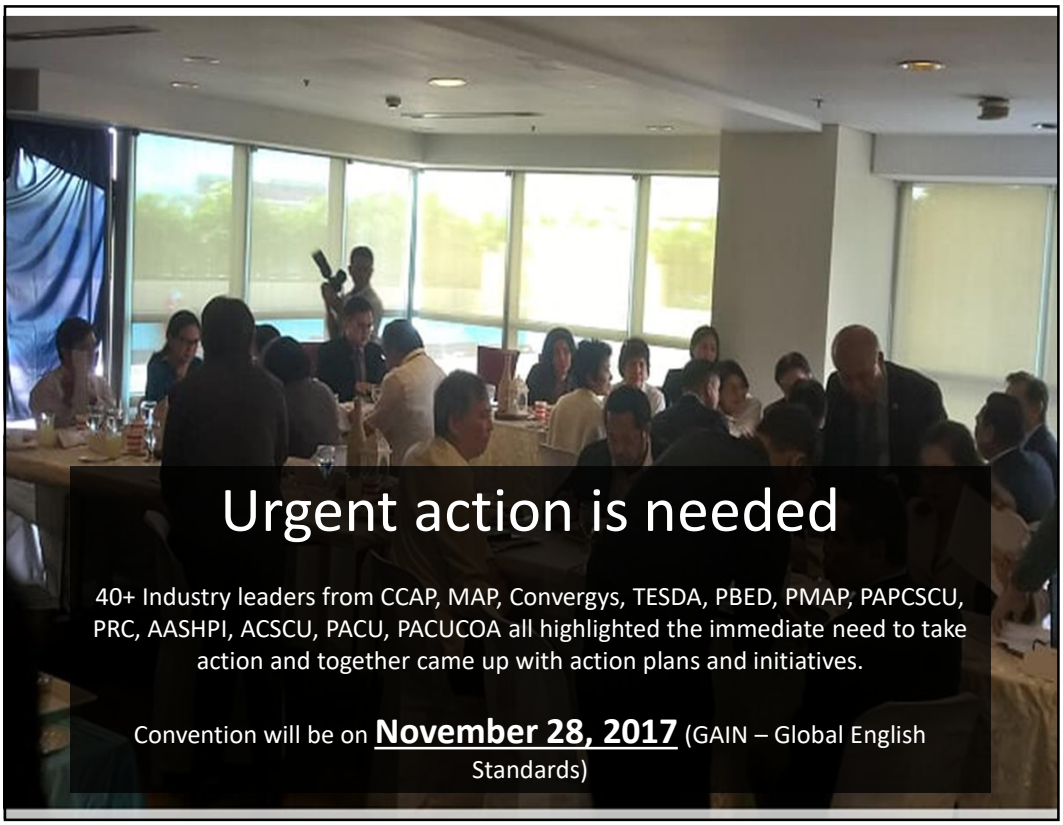
Laos Ministry of Education in Laos signed MOU to use and support **ETS** assessments – **TOEIC®**, **TOEFL®** in 2014

Japan will require **TOEFL®** for entrance to all local Universities by 2018

Macau Government sponsors free **TOEIC®** testing for all student nationals

Benchmarks for schools

	Score Standard
Harvard University	**CEFR B2** – Admissions for Foreign students (TOEFL iBT 100)
Ateneo de Manila University	**near CEFR B2** – Admissions for Foreign students (TOEFL iBT 80)
Leading Engineering University (Provincial)	**CEFR B2** – For faculty regularization (TOEIC 785)
International School	**CEFR B2** – For faculty regularization (TOEIC 785)
Leading network of schools in the Philippines	**CEFR B2** – Required for all faculty
Thailand (All teachers)	**CEFR B2** – For faculty regularization (TOEIC 550)



Combined Suggestions and Action Plans from 40+ Industry Leaders

Industry

- Private institutions/ companies should set standards and echo back to academe so students will know what score to aim for
- Ask/Prefer for CEFR Certificates such as TOEIC/ TOEFL/ IELTS as part of work/ application
- Require professionals to have at least a B2 CEFR at entry level, and a C1 CEFR at Professional level
- Share with schools and institutions programs/ resources on how to effectively teach English

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