



INTO»

Education in the Industry 4.0

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INTO'S UNIVERSITY PARTNERS

Pendidikan di Abad 21



“Pendidikan umumnya berarti daya upaya untuk memajukan budi pekerti (character), pikiran (intellect) dan jasmani anak-anak agar selaras dengan alam dan masyarakatnya”

From Industry 1.0 to Industry 4.0

First Industrial Revolution

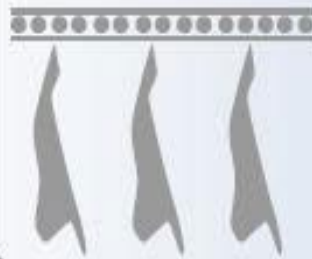
based on the introduction of mechanical production equipment driven by water and steam power



First mechanical loom, 1784

Second Industrial Revolution

based on mass production achieved by division of labor concept and the use of electrical energy



First conveyor belt, Cincinnati slaughterhouse, 1870

Third Industrial Revolution

based on the use of electronics and IT to further automate production



First programmable logic controller (PLC) Modicon 084, 1969

Fourth Industrial Revolution

based on the use of cyber-physical systems



Degree of complexity



1800

1900

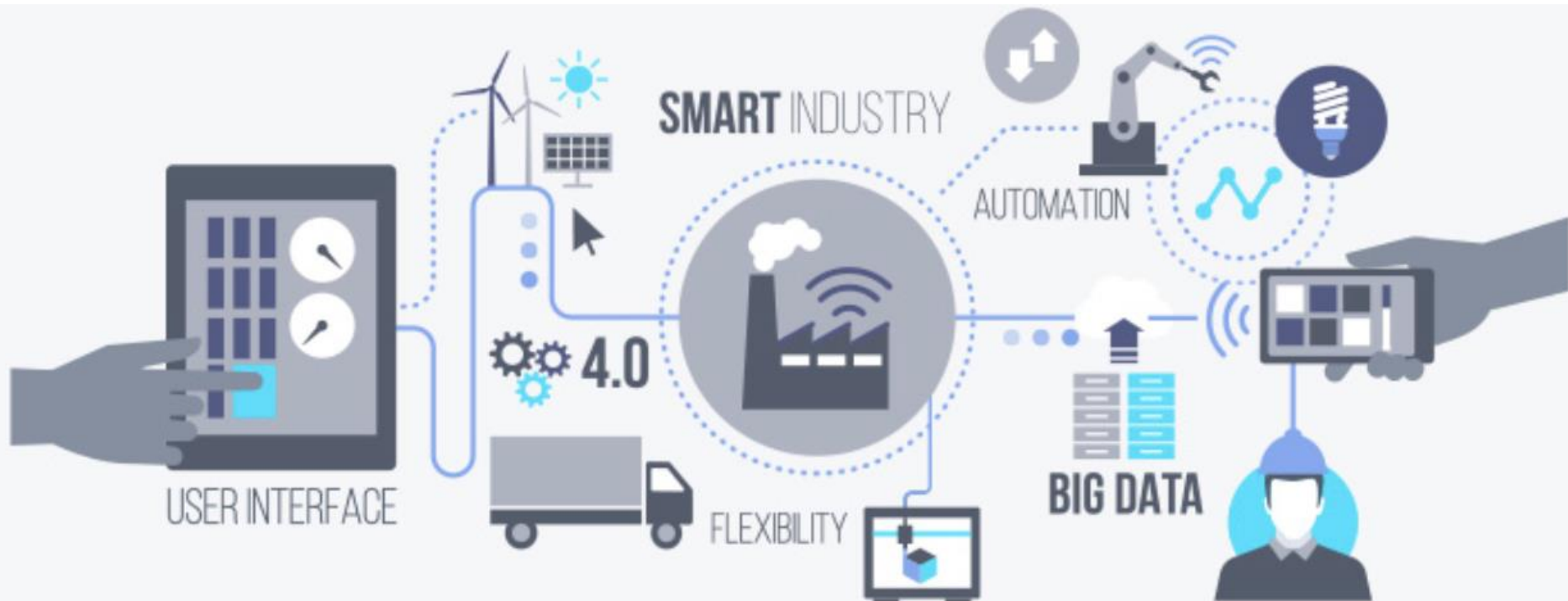
2000

Today

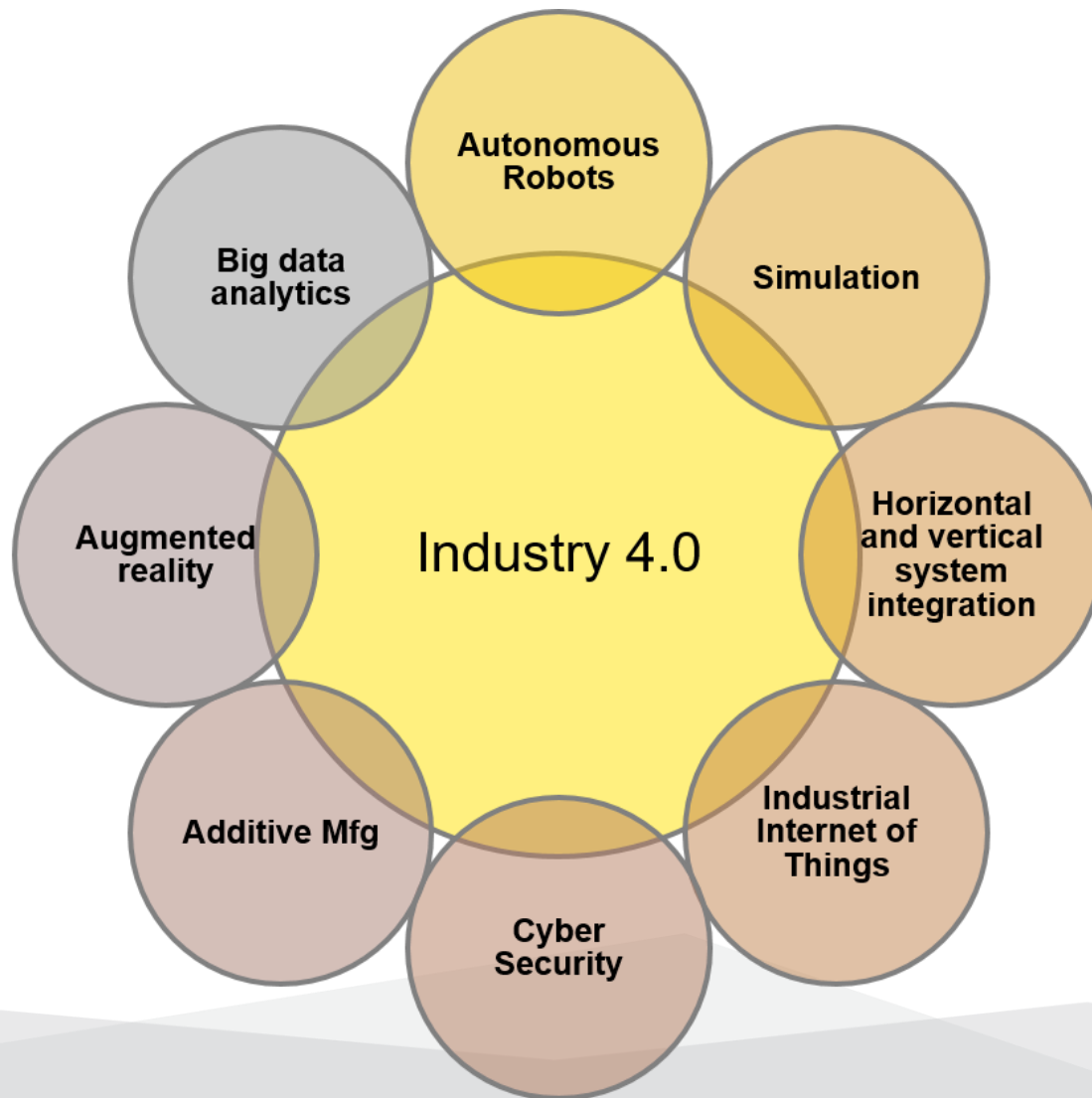
Time

What is Industry 4.0?

Revolusi industri yang berbasis teknologi pintar yang dapat menghubungkan teknologi physical, digital and biological yang di hubungkan dan dapat berkomunikasi melalui media internet.



Products of Industry 4.0



Impact of Industry 4.0



Tantangan Dunia Pendidikan

Menyiapkan lulusan untuk masuk dunia kerja
yang belum tercipta, dengan
menggunakan teknologi yang belum
ditemukan dan untuk menyelesaikan
masalah yang belum diketahui.

Richard Riley
US Secretary of State



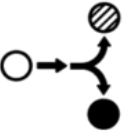
Pendidikan adalah kunci untuk menaklukkan industry 4.0



Adopt Technology



Change in Education Paradigm

	First Industrial Revolution	Fourth Industrial Revolution
Learning Objectives	Mastery of basic skills and knowledge (e.g., reading, math) 	Development of whole person across multiple intelligences (e.g., emotional, intellectual, social) 
Role of Educator	Expert 	Facilitator 
Learner Experience	'Factory model' - Passive, structured, directed, en masse 	'Custom model' - Active, self-directed, exploratory 
Target Age	K-12 	Lifelong learning 
Expertise	"Teacher knows best" 	"Anyone can teach" 
Access	Physical classroom 	Anytime, anywhere, any device 

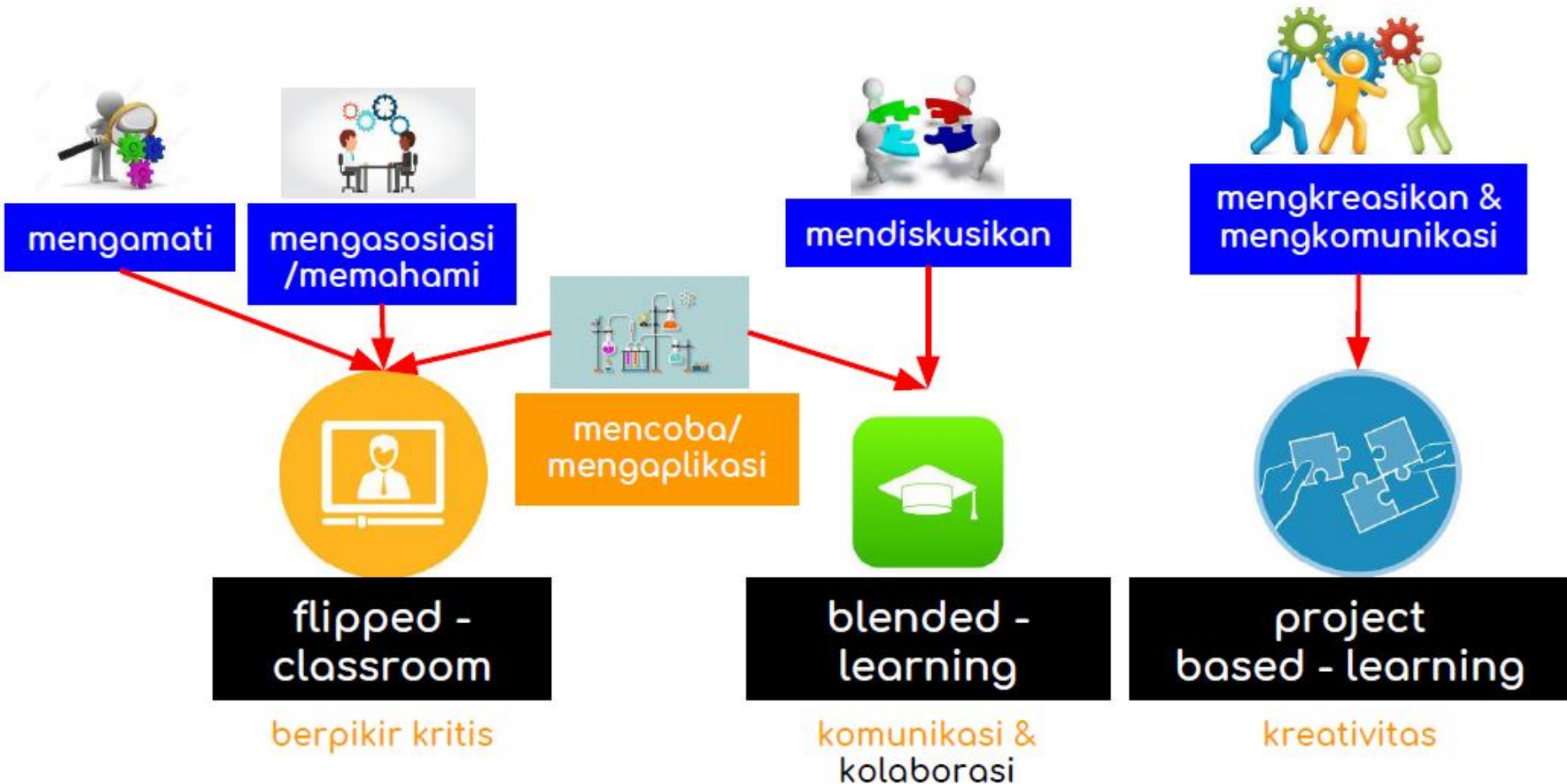
Pendidikan 4.0

Mendukung terwujudnya pendidikan cerdas melalui **peningkatan dan pemerataan kualitas pendidikan**, perluasan akses dan relevansi memanfaatkan teknologi dalam mewujudkan pendidikan kelas dunia untuk menghasilkan peserta didik yang memiliki setidaknya 5 keterampilan abad 21 yaitu;

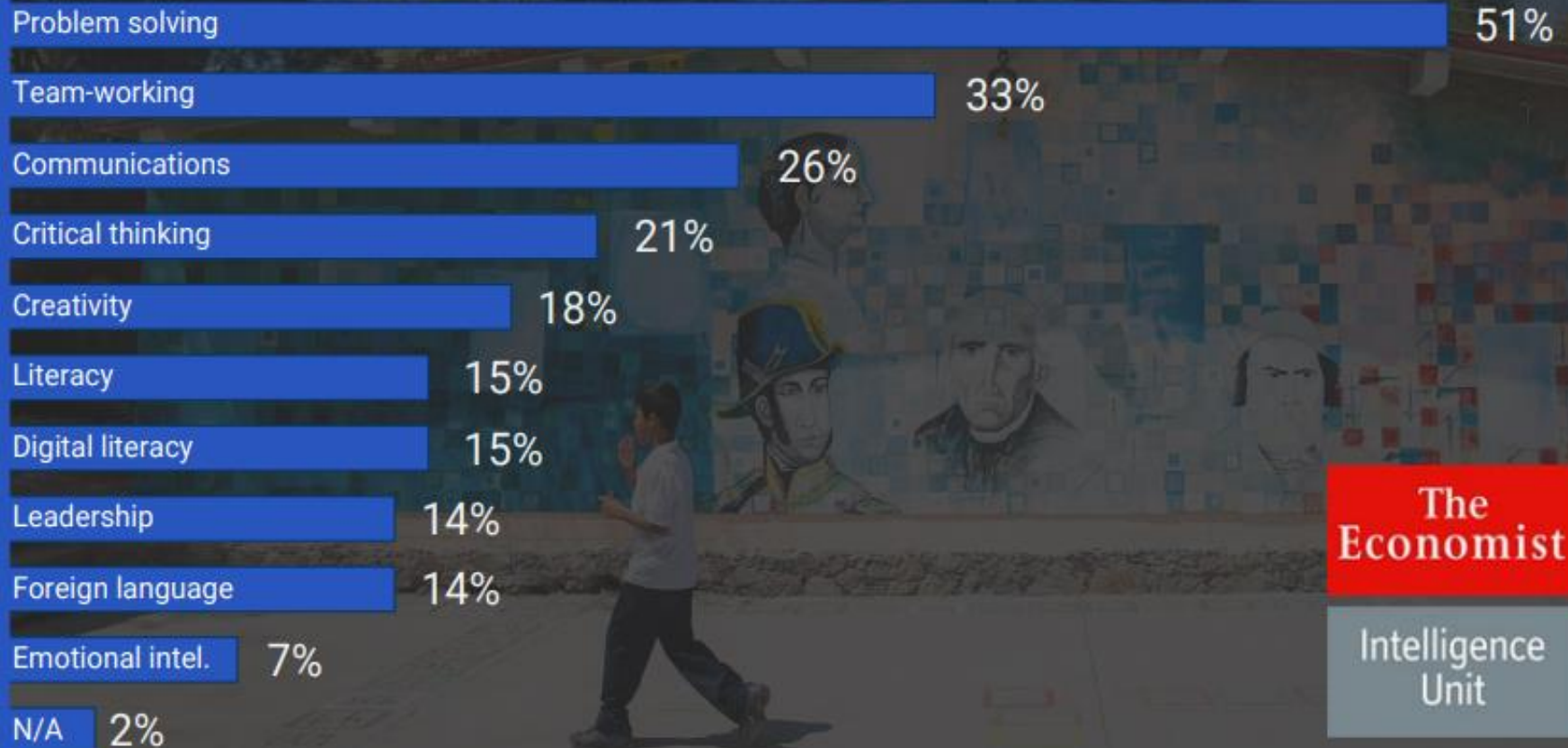
1. Kolaborasi
2. Komunikasi
3. Kritis
4. Kreatif
5. Kepedulian



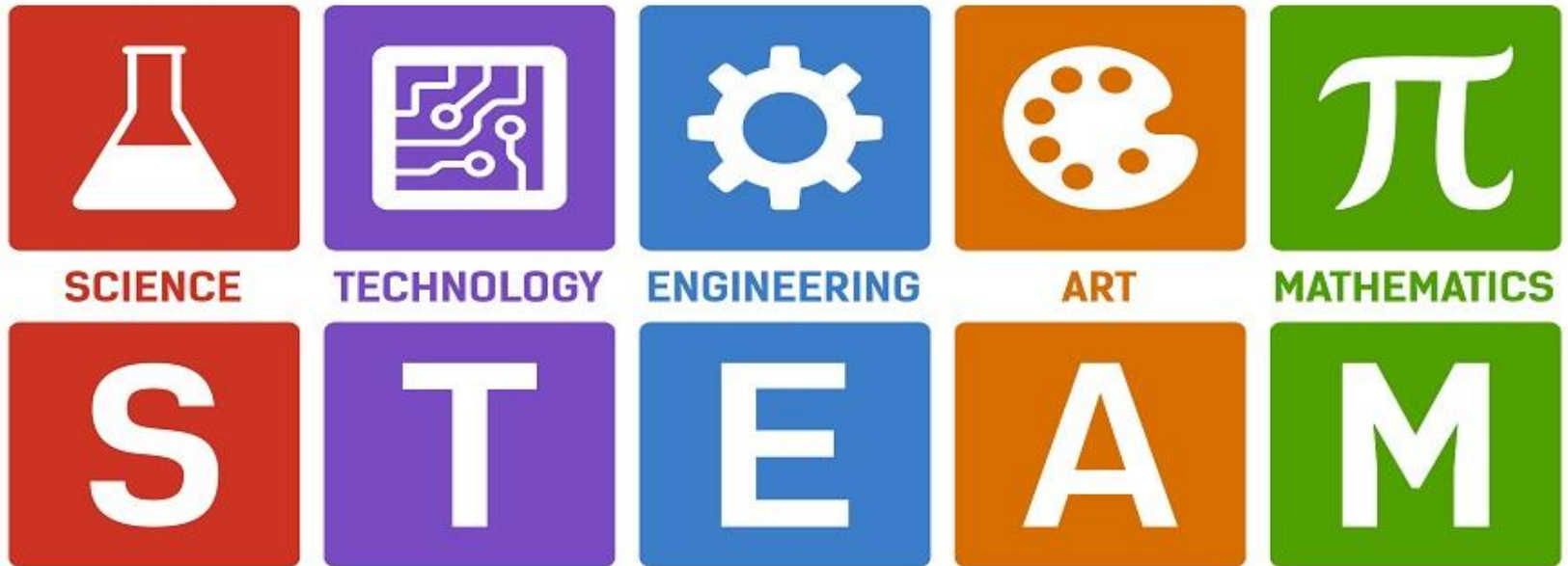
Pendidikan 4.0



Top Skills Dibutuhkan Dalam Dunia Kerja Saat Ini



New Education Paradigm



STEAM Education in Action



3 ORMS robotics teams qualify for world championships

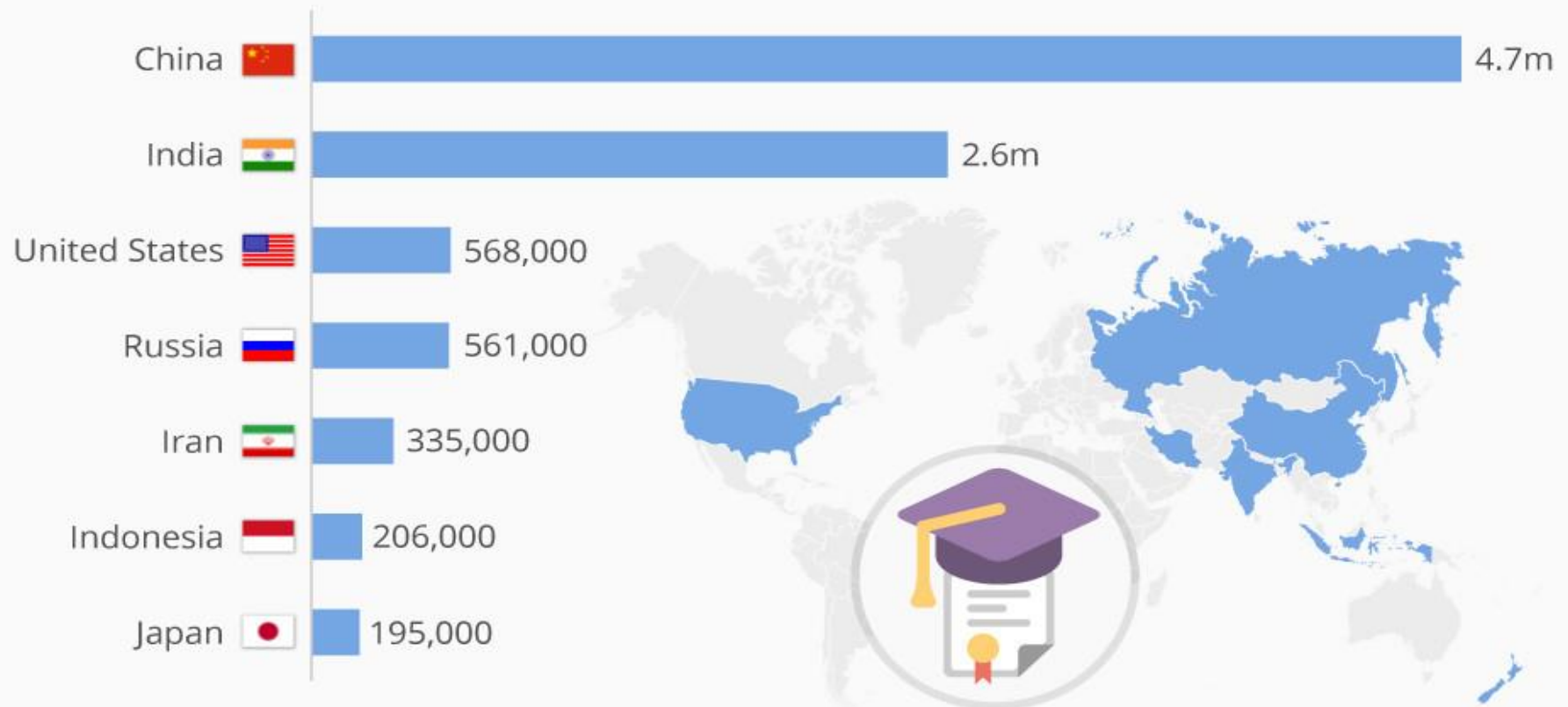


▲ HIDE CAPTION

Member of one of three Oyster River Middle School robotics teams that qualified for the world championships in April. [Courtesy photo]

The Countries With The Most STEM Graduates

Recent graduates in Science, Technology, Engineering & Mathematics (2016)



@StatistaCharts

Source: World Economic Forum

statista

1. Research Power



Top Research Universities in INTO Group

University of Alabama at Birmingham \$516 M in research

University of South Florida \$505 M in research funding

Colorado State University \$338 M in research funding

George Mason University \$106 M in research funding

2. Industry links / Opportunities

The Facebook suite at UAB awarded after the university solved cyber crimes on their behalf





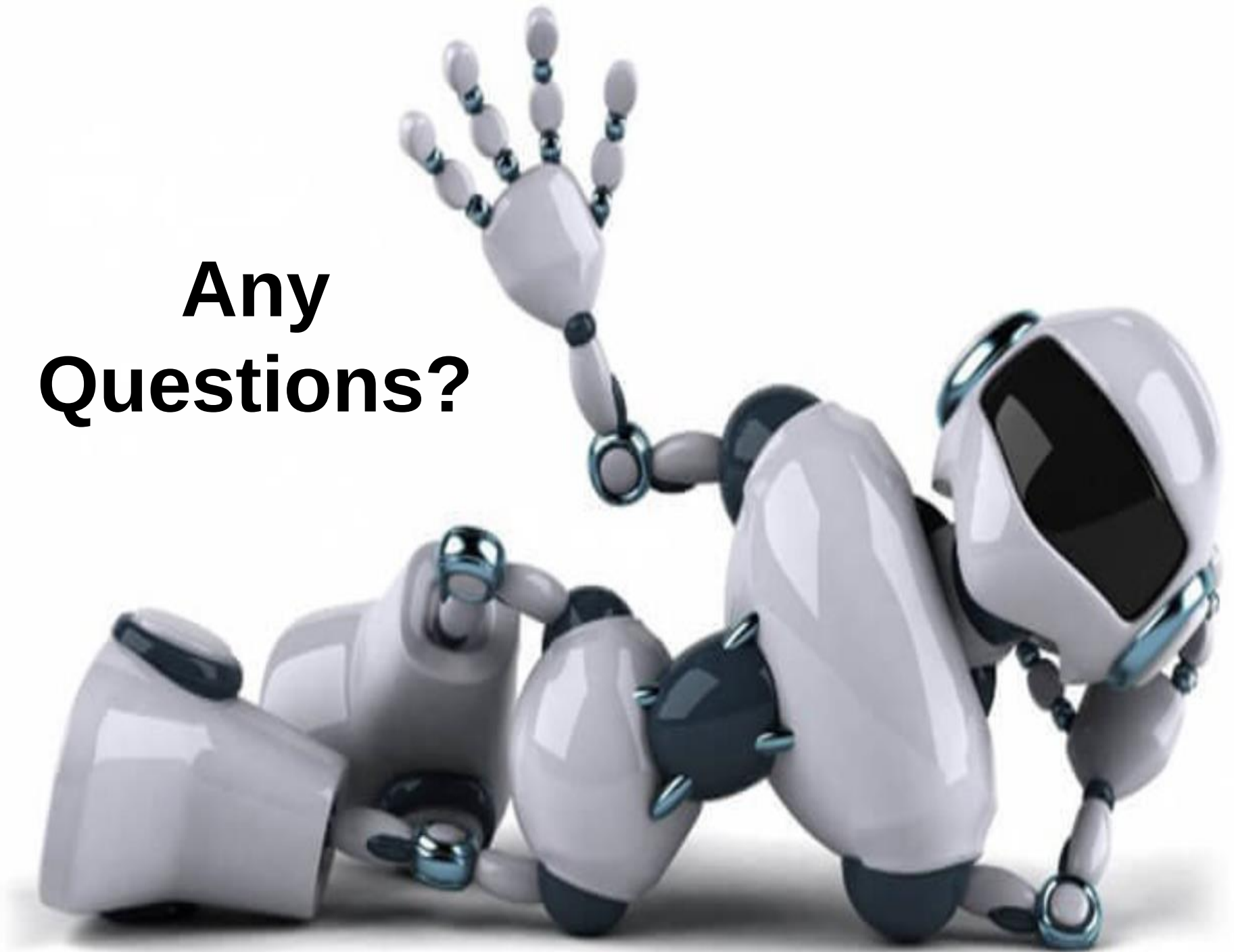
**Peserta didik harus memiliki kepekaan sosial
dan sekolah dapat memupuk jiwa sosial**



In Conclusion

- Instansi Pendidikan harus mempersiapkan peserta didik untuk menjawab tantangan Industry 4.0 atau abad 21 sehingga menghasilkan output yang dapat siap kerja
- Program pendidikan perlu mengadopsi teknologi dan juga paradigma STEAM
- Pendidikan dapat membuat peserta didik intelek tapi juga punya karakter (ahlaq) yang baik

**Any
Questions?**





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