LITERASI 4.0

(istockphoto.com)

C. Kuntoro Adi, S.J – Agustus 2020

1

INSIDE: A 14-PAGE SPECIAL REPORT ON TECH STARTUPS

The Economist

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
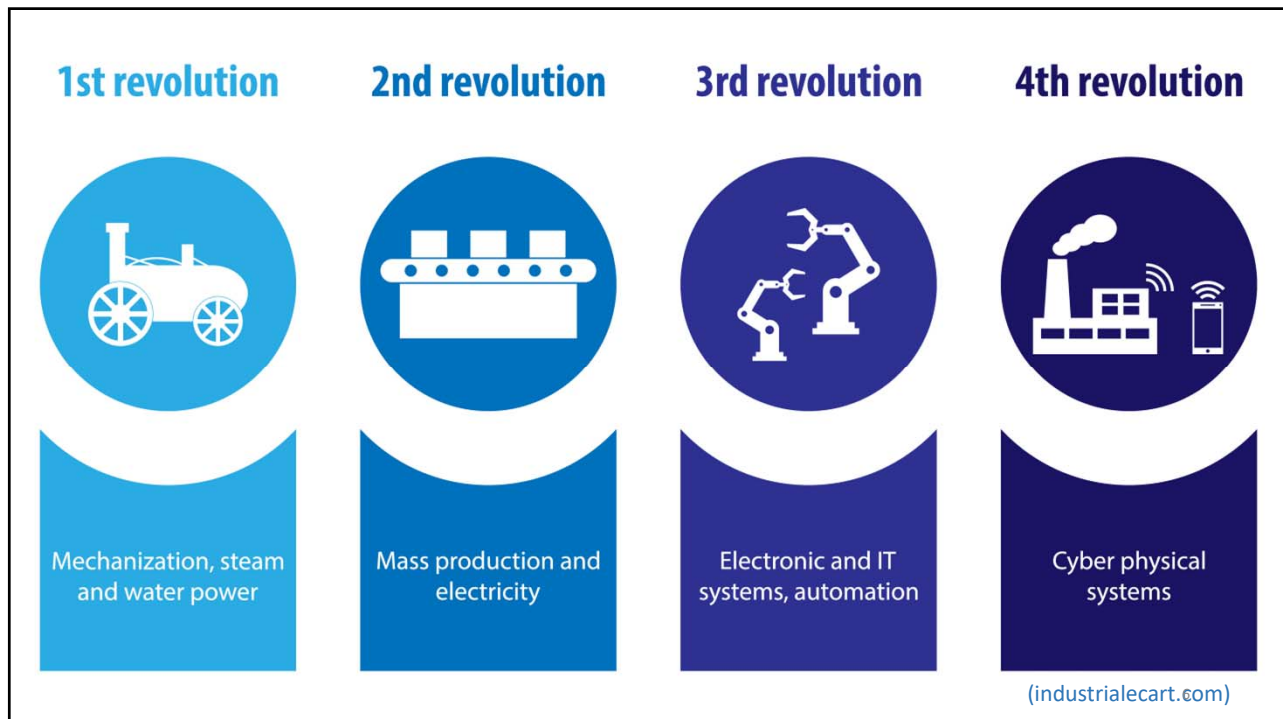
(fresh.obc.org)

In 2004 – **Facebook** didn't even exist yet, **twitter** is a sound, the **cloud** was still in the sky, **4G** was a parking space, "**applications**" were what you sent to college, **Big Data** was a good name for a rap star, **Skype** was a typographical error.
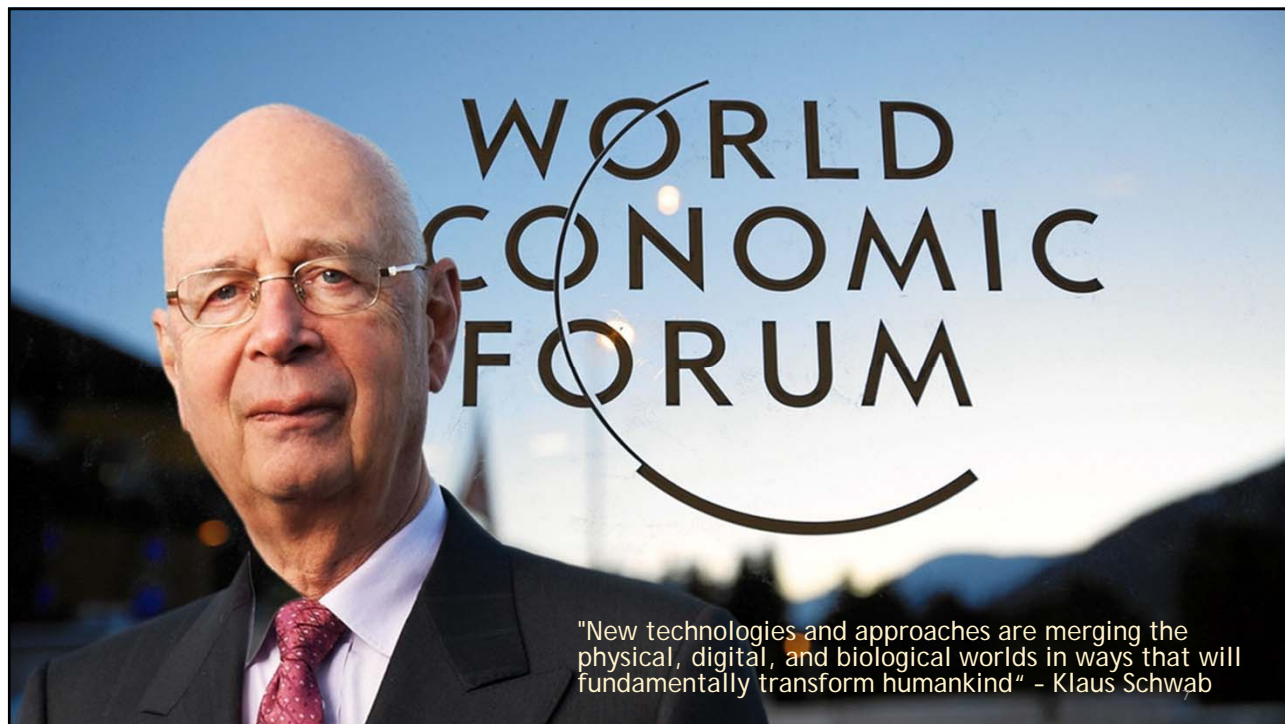
(Tom Friedman, 2016,

Thank You for Being Late: An Optimist's Guide to Thriving in the Age of Acceleration)

THE AGE OF ACCELERATION

(freshnobc.org)

1. "Digital is a new normal"
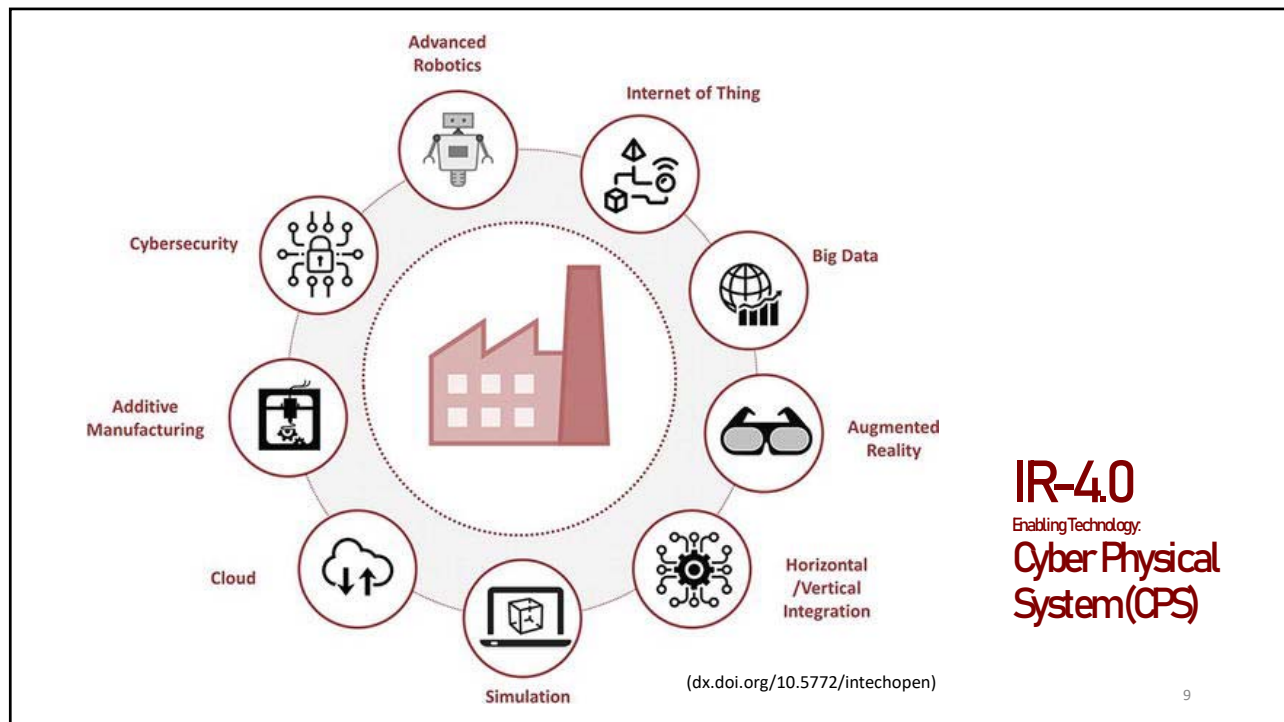2. Disrupsi digital
3. Literasi 4.0 ?!

1. Digital = new normal

1st revolution	2nd revolution	3rd revolution	4th revolution
Mechanization, steam and water power	Mass production and electricity	Electronic and IT systems, automation	Cyber physical systems

(industrialecart.com)

"New technologies and approaches are merging the physical, digital, and biological worlds in ways that will fundamentally transform humankind" – Klaus Schwab

4th revolution

Cyber physical systems

1. Smart Connection
2. Data to Information
3. Digital Twin
4. Cognition
5. Configuration

8

IR-4.0
Enabling Technology:
Cyber Physical System (CPS)

(dx.doi.org/10.5772/intechopen)

9

2.
DISRUPSI DIGITAL

(simpleandseason.com)

10

MACHINES ARE BETTER AT …

- Processing huge data sets with speed and accuracy
- Working 24/7 without breaks, tiring, or getting distracted
- Scaling work up or down quickly
- Performing repetitive works
- Doing dangerous works, such as underwater search and rescue
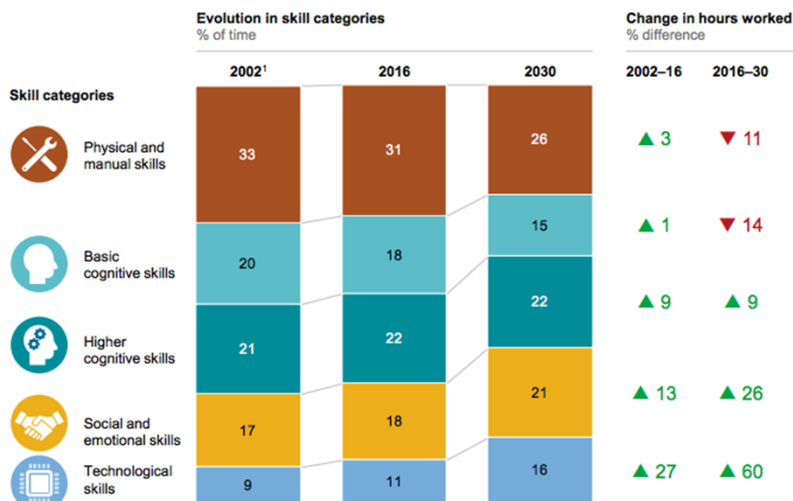
HUMANS ARE BETTER AT …

- Displaying empathy and humor
- Understanding context and picking up social cues
- Transferring their skill to others (teaching)
- Adapting their skill to different situations
- Demonstrating critical thinking, defining problem and creative pursuits

Source: Deloitte analysis.

Deloitte Insights | deloitte.com/insights

Automation and AI will accelerate skill shifts.

Based on McKinsey Global Institute workforce skills model
United States, all sectors, 2002–30

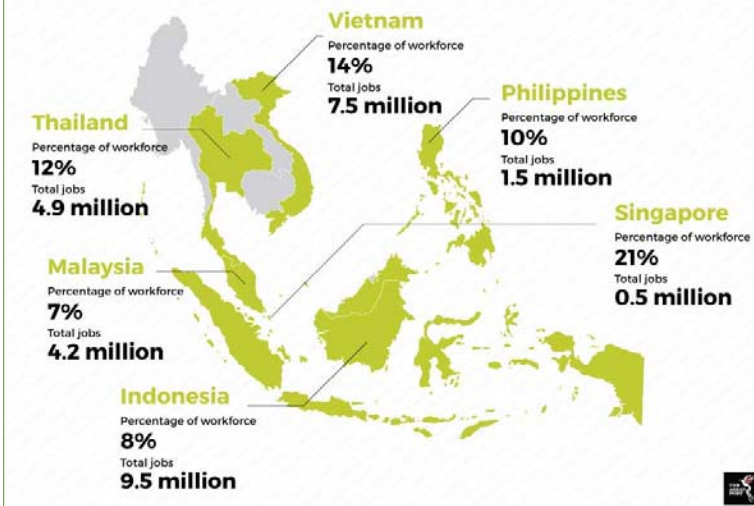| Skill categories	Evolution in skill categories % of time			Change in hours worked % difference	
	2002[1]	2016	2030	2002–16	2016–30
Physical and manual skills	33	31	26	▲ 3	▼ 11
Basic cognitive skills	20	18	15	▲ 1	▼ 14
Higher cognitive skills	21	22	22	▲ 9	▲ 9
Social and emotional skills	17	18	21	▲ 13	▲ 26
Technological skills	9	11	16	▲ 27	▲ 60

1 Calculated using the 2004 to 2016 CAGR extrapolated to a 14-year period.
NOTE: Based on difference between hours worked per skill in 2016 and modeled hours worked in 2030. Numbers may not sum due to rounding.

SOURCE: U.S. Bureau of Labor statistics; McKinsey Global Institute workforce skills model; McKinsey Global Institute analysis

a. Otomatisasi

JOB DISPLACEMENT BY 2028 (ASEAN-6)

Vietnam
Percentage of workforce
14%
Total jobs
7.5 million

Philippines
Percentage of workforce
10%
Total jobs
1.5 million

Thailand
Percentage of workforce
12%
Total jobs
4.9 million

Singapore
Percentage of workforce
21%
Total jobs
0.5 million

Malaysia
Percentage of workforce
7%
Total jobs
4.2 million

Indonesia
Percentage of workforce
8%
Total jobs
9.5 million

https://theaseanpost.com/article/singapores-40-challenge

- ❖ 41% : tidak memiliki ketrampilan IT yang dituntut pekerjaan baru
- ❖ 30%: tidak memiliki "interactive skill" (negosiasi, persuasi, pelayanan terhadap pelanggan)
- ❖ 25%: tidak memiliki "ketrampilan dasar" (active learning, reading, writing)

13

WHICH SKILLS WILL BE NEEDED?

Studies show that the strongest growth is expected in technological skills, including both basic **digital skills** and more advanced technological skills.

Demand for higher **cognitive skills, social** and **emotional skills** is also expected to rise.

Creativity

Entrepreneurship

Innovation

HIGHER COGNITIVE SKILLS

SOCIAL & EMOTIONAL SKILLS

Leadership

Service Orientation

Social Influence
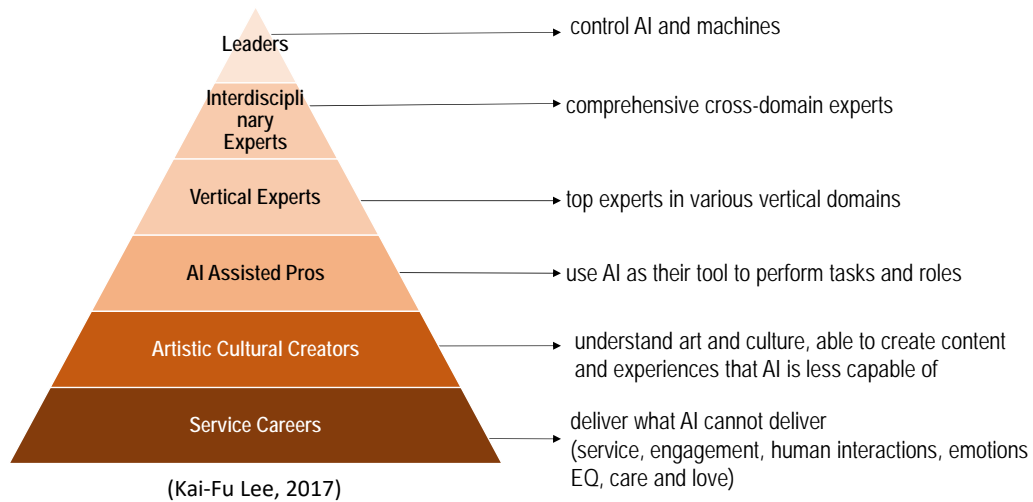
Managing Others

Emotional Intelligence

These softer skills are becoming the new hard skills desired in our workforce.

(intuition.com)

(bandingkan: www.bloomberg.com/graphics/2015-job-skills-report/)

14

B. Perubahan hirarki kerja

Leaders — control AI and machines

Interdisciplinary Experts — comprehensive cross-domain experts

Vertical Experts — top experts in various vertical domains

AI Assisted Pros — use AI as their tool to perform tasks and roles

Artistic Cultural Creators — understand art and culture, able to create content and experiences that AI is less capable of

Service Careers — deliver what AI cannot deliver (service, engagement, human interactions, emotions EQ, care and love)

(Kai-Fu Lee, 2017)

15
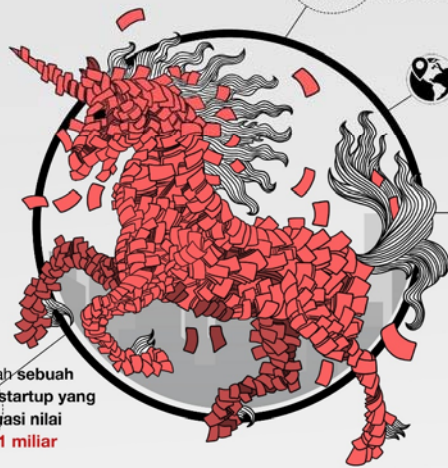
c. Distribusi Kekayaan

16

4 UNICORN INDONESIA

Penguasaan asing di unicorn bisa berdampak Indonesia menjadi pasar semata dan penonton di rumah sendiri. Saat ini ada empat startup unicorn di Indonesia, yakni Gojek, Tokopedia, Bukalapak, dan Traveloka.

GO-JEK
Pendiri
Nadiem Makarim
Didirikan 2010
*US$ 3,5 miliar
7 kali
Investor
Tencent Holdings, JD.com, New World Strategic Invesment, Google, Temasek Holdings, Hera Capital, Astra International dan GDP Ventures

tokopedia
Pendiri
William Tanuwijaya
Didirikan 2009
*US$ 2,4 miliar
9 kali
Investor
Alibaba Group, Softbank Grup, Sequoia Capital

traveloka
Pendiri
Ferry Unardi, Derianto Kusuma ,dan Albert Zhang
Didirikan 2012
*US$ 500 juta
4 kali
Investor
Expedia, GFC dan Sequoia Capital dari AS, Hillhouse Capital dan JD.com

Bukalapak
Pendiri
Achmad Zaky
Didirikan 2011
*US$ 200 juta
6 kali
Investor
Ant Financial, Mirae Asset , Naver Asia, GIC dan Emtek Grup dari Indonesia

50.75 T
34.8 T
7.25 T
2.9 T

Total suntikan dana   Penggalangan dana   (*) Diprediksi

(cnbcindonesia.com)

Consider this?
(webstagramsite.com)

bitcoin — The world's biggest bank, with no actual cash.
Uber — The world's largest taxi company, owns no vehicles.
airbnb — The world's largest accomodation provider, owns no real estate.
facebook — The world's most popular media owner, creates no content.
Alibaba — The world's most valuable retailer, has no inventory.

Karakteristik:
1. Memanfaatkan kapasitas atau sumber daya tak terpakai
2. Platform online menjembatani pemilik dengan yang membutuhkan
3. Jalur pendek
4. Cost transaksi minimal
5. Hubungan: mitra

D. Sharing Economy

18

9

3.
DIGITAL LITERACIES = POWER !!
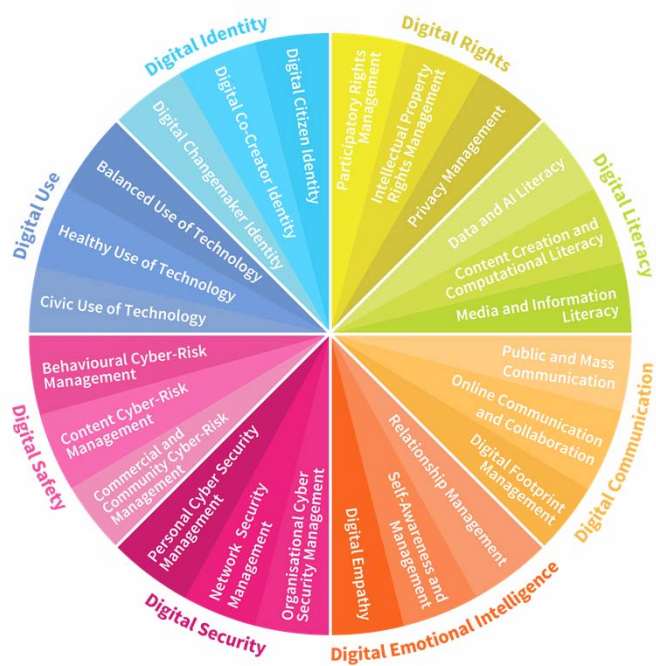
(gemreportunesco.wordpress.com)

19

LITERASI DIGITAL

"Kemampuan untuk memahami dan menggunakan informasi dalam format beragam yang berasal dari berbagai sumber, dipresentasikan melalui computer" (Gilster, 1997)

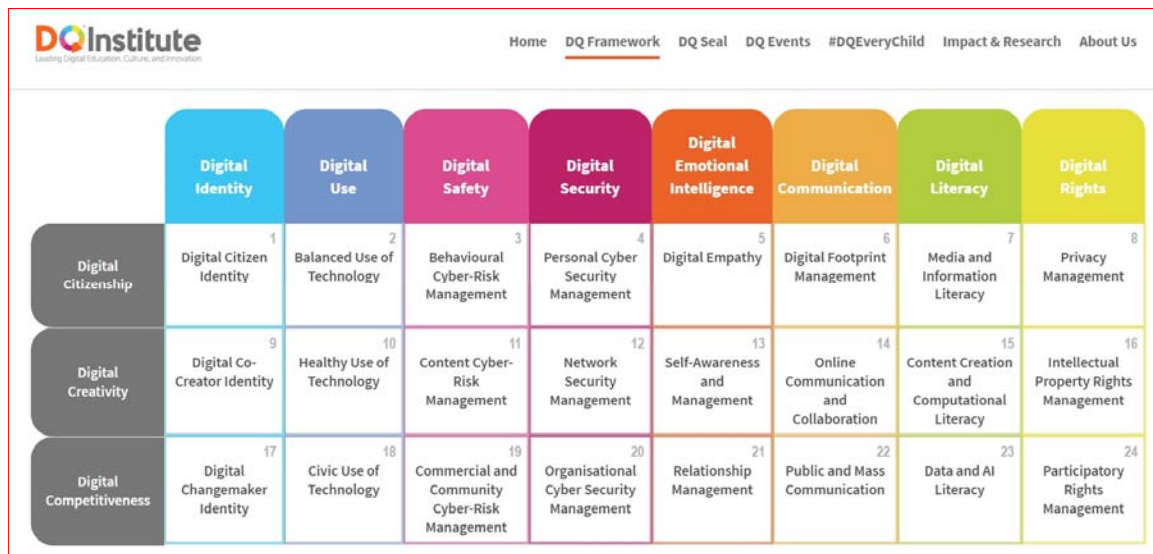"Literasi ICT, literasi informasi, literasi media" (Gallardo-Echenique, 2015)

20

FRAMEWORK

21

Digital Quotient

Digital Intelligence

(dqinstitute.org)

22

DQInstitute
Leading Digital Education, Culture, and Innovation

Home   DQ Framework   DQ Seal   DQ Events   #DQEveryChild   Impact & Research   About Us

	Digital Identity	Digital Use	Digital Safety	Digital Security	Digital Emotional Intelligence	Digital Communication	Digital Literacy	Digital Rights
Digital Citizenship	1 Digital Citizen Identity	2 Balanced Use of Technology	3 Behavioural Cyber-Risk Management	4 Personal Cyber Security Management	5 Digital Empathy	6 Digital Footprint Management	7 Media and Information Literacy	8 Privacy Management
Digital Creativity	9 Digital Co-Creator Identity	10 Healthy Use of Technology	11 Content Cyber-Risk Management	12 Network Security Management	13 Self-Awareness and Management	14 Online Communication and Collaboration	15 Content Creation and Computational Literacy	16 Intellectual Property Rights Management
Digital Competitiveness	17 Digital Changemaker Identity	18 Civic Use of Technology	19 Commercial and Community Cyber-Risk Management	20 Organisational Cyber Security Management	21 Relationship Management	22 Public and Mass Communication	23 Data and AI Literacy	24 Participatory Rights Management

https://www.dqinstitute.org/dq-framework/

23

Digital literacy is the ability to find, evaluate, utilize, share, and create content using information technologies and the Internet.

Digital Literacy is important in education, the workforce and generally for every internet user.

Digital Literacy is one component of Digital Citizenship.

Digital literacy is when students can manipulate and evaluate data to construct their own meaning.

Digital literacy is using technologies to find, use and disseminate information.

Digital literacy is the ability to effectively and critically navigate, evaluate and create information using a range of digital technologies.

Digital literacy is a process, not a tool.

Digital literacy is critical to the development of UK further and higher education as digital technologies provide new opportunities to enhance teaching, learning, research and the management of organisations.

Digital Literacy is essential reading for students, researchers, writers, investors, and anyone who intends to use the bountiful resources available on-line to bolster their work.

Digital literacy is the means by which our students can access and gain fluency in the core skills we already teach: comprehension, synthesis, rhetoric, and argument.

Digital literacy is about many things, not just digitization projects.

Digital literacy is an essential part of job-readiness, socialization and independence.

Digital literacy is the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers.

(Doug Belshaw, 2017)   24

~~Digital Literacy~~
Digital Literacies

25

EIGHT ESSENTIAL ELEMENTS OF DIGITAL LITERACIES
(Doug Belshaw, 2012)

- **Cu** Cultural
- **Cr** Creative
- **Cn** Constructive
- **Co** Communicative
- **Cf** Confident
- **Cg** Cognitive
- **Ct** Critical
- **Ci** Civic

26

Traditional context
+
New twist
=

DIFFERENT LITERACY

(Doug Belshaw, 2012) 29

Cu
Cultural

Co
Communicative

Ct
Critical

Ci
Civic
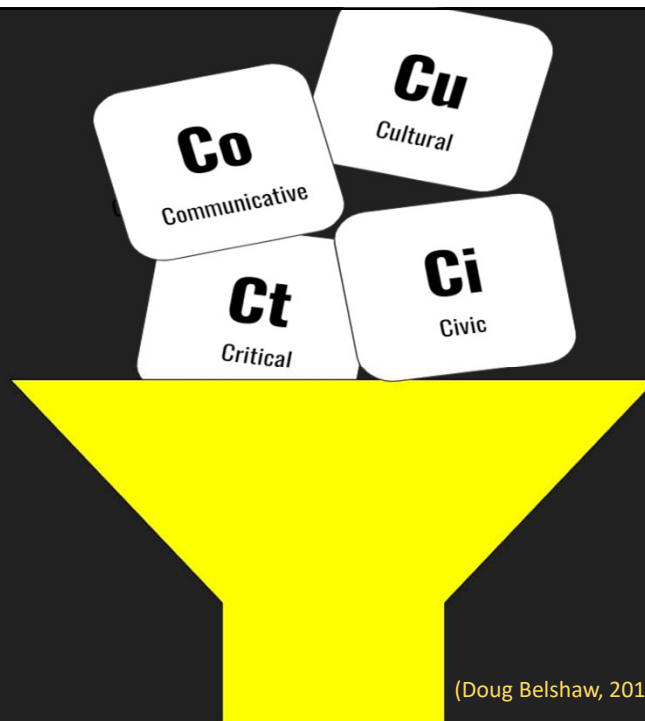
(Doug Belshaw, 2012) 30

MODEL PENGEMBANGAN LITERASI DIGITAL

31

32