AHERI Virtual CONFERENCE 2020 - 5 – 6 October 2020
Innovations in Higher Education

Digital Infrastructures and Education

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Education in a changing world
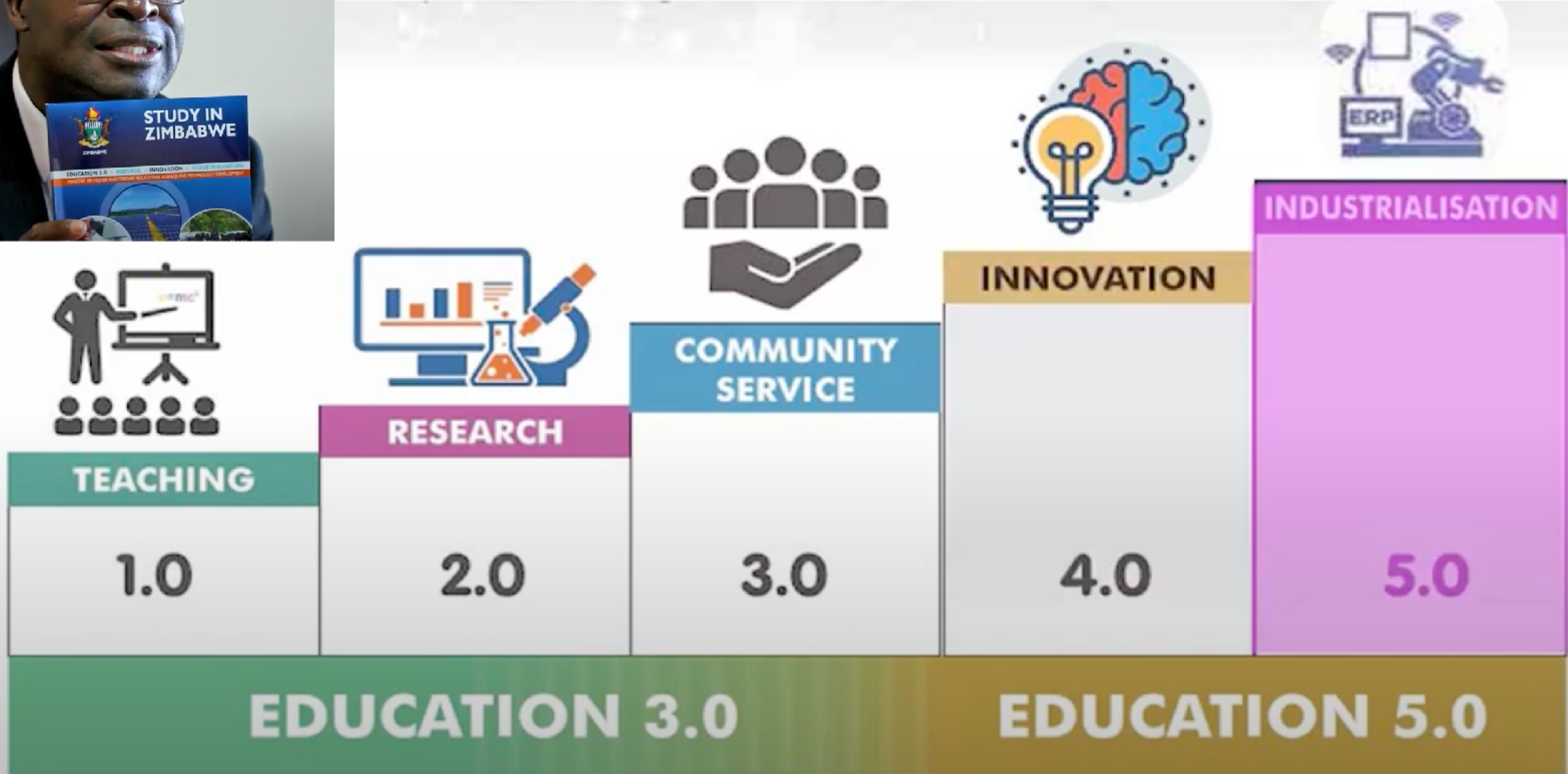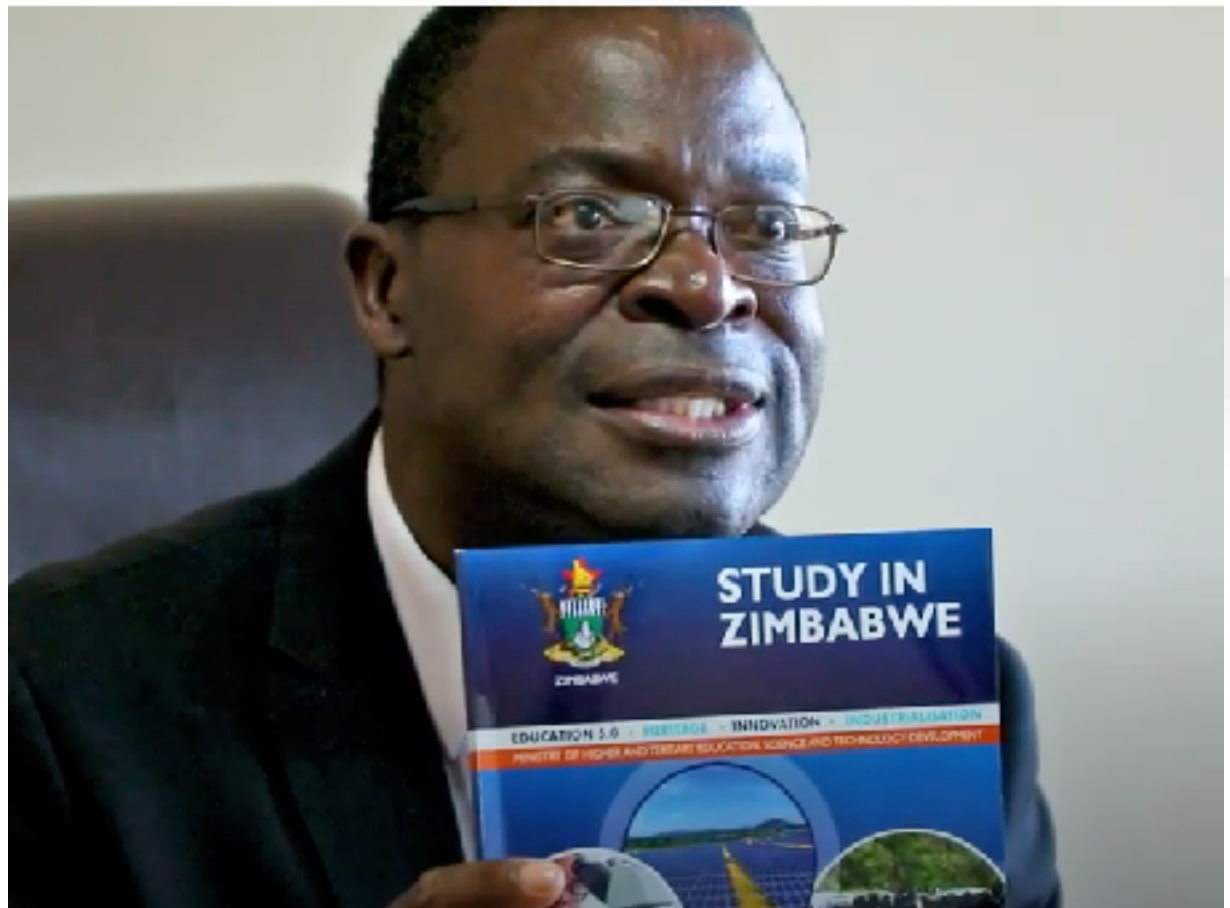
- Towards Education 5.0

- Education 4.0 - skills for industry

- Education 5.0 - skills for society

EDUCATION 3.0 to EDUCATION 5.0

[Source: https://www.youtube.com/watch?v=w4upWONBBbY]

Published: 14 January 2020

Schools of the Future: Defining New Models of Education for the Fourth Industrial Revolution

As globalization and rapid advancements in technology continue to transform civic space and the world of work, education systems have grown increasingly disconnected from the realities and needs of global economies and societies. Education models must adapt to equip children with the skills to create a more inclusive, cohesive and productive world.

[Source: World Economic Forum: https://www.weforum.org/reports/schools-of-the-future-defining-new-models-of-education-for-the-fourth-industrial-revolution]

Education 4.0 - fit for Industry 4.0

- **Transformed teaching** - in a world of artificial intelligence and "information everywhere"

- **Personalised learning** – an individualised approach that takes learner diversity, performance and behaviour into account.

- **New assessment** – micro-credentials, AI instead of summative tests

- **Intelligent digital and physical** – responsive to student journeys and interactions (cyber-physical)

[Source: JICS, "Preparing for Education 4.0", https://www.timeshighereducation.com/hub/jisc/p/preparing-education-40]

[Source: Dr KPM, "From Education 4.0 to 5.0", ThinQ, https://www.youtube.com/watch?v=I-6eIZFRxTA]

Education 4.0

Economy-Oriented Education: Industry 4.0 Stemming from the 'fourth industrial revolution':
- better-prepared workforce,
- greater employability for students,
- **better preparation for future,**
- better return expectation on educational investment.

Education 5.0

- Cognitive skills
  - literacy and numeracy
  - critical thinking
  - problem solving

  +

- Social and emotional skills
  - empathy, teamwork
  - leadership
  - cultural awareness
- Global challenges
  - Climate, Sustainability (SDGs)

Reality

- "Boys have the toys"
  - ➡ digital divide in both devices
    - Example Smartphone ownership: 33% male, 16% female (Bangladesh)
  - ➡ mobile broadband access

- Costs of Access
  - ➡ School connectivity (SDG indicator 4.A.1)
    - TZ: ~3% of schools are connected to Internet
  - ➡ Digital Health for primary health facilities
  - ➡ Community involvement/digital transformation

3G, 4G, 5G

OPEX

Radio / Fibre

CAPEX

Satellite

- 1. School information free available (at the school)
- 2. The use of digital friends (trust)
- 3. Community engagement
- 4. Separation:
  - ✓ Lightweight content (text & pictures)
    - ‣ good user experience
    - ‣ little mobile data
  - ✓ Heavy content
    - ‣ EDU videos at school
    - ‣ available for everyone
  - ✓ Restrict what can be accessed
    - ‣ meaningful access
    - ‣ trusted Internet

[Adapted from Catherine R. Kimambo, Africa Child, 2020]

Addressing the Priorities by

- Norway Governmental White Paper, Priorities
  ➡ Access, Skills, Regulations, Inclusion

- Costs of Access
  ➡ Operational Costs (OPEX) of School connectivity less than 20 USD/month

- Regulations
  ➡ free access to information

Norwegian Ministry of Foreign Affairs — Summary

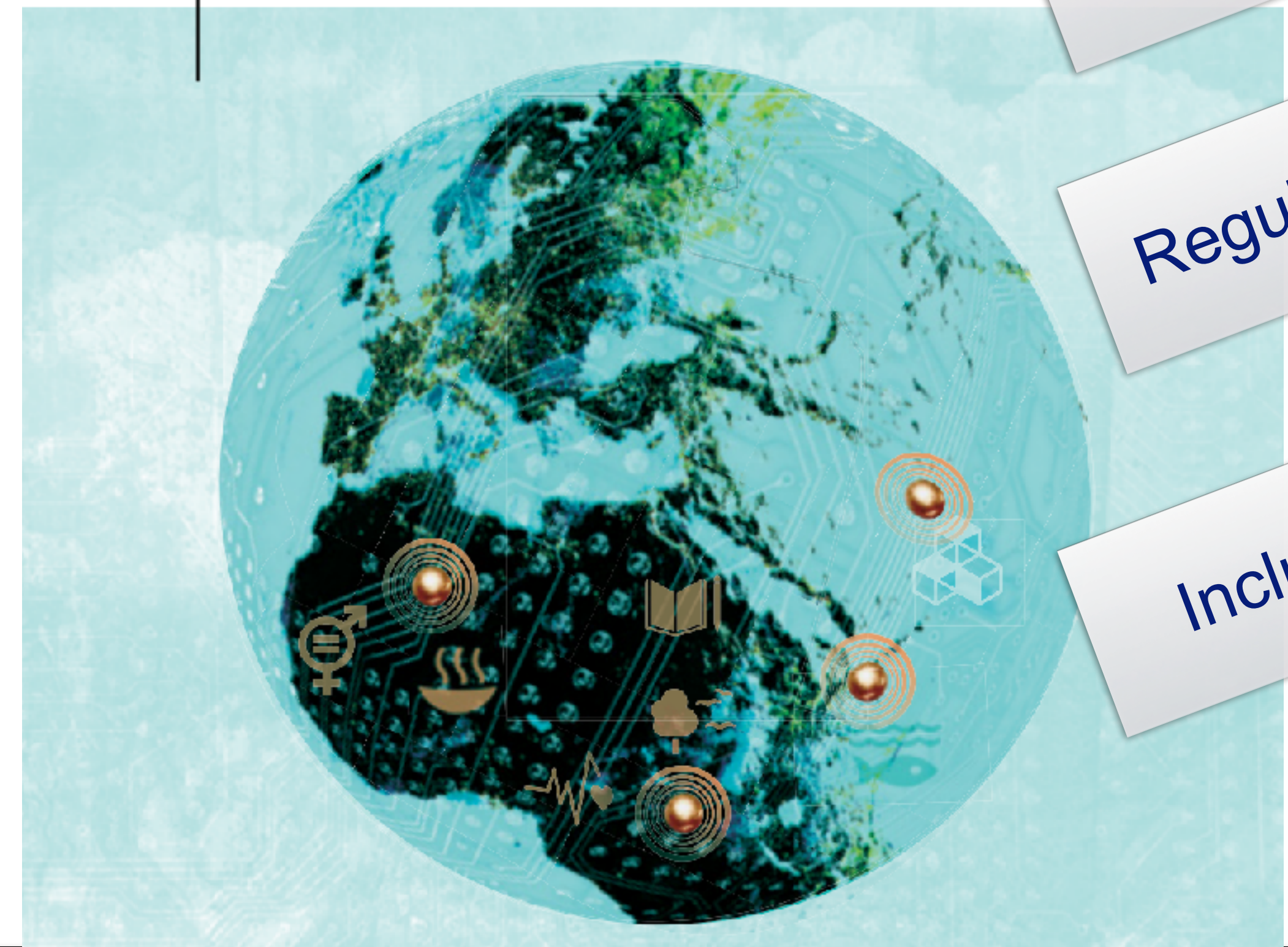Meld. St. 11 (2019–2020) Report to the Storting (white paper)

Digital transformation and development policy

Access

Skills

Regulations

Inclusion

- National Knowledge Portal
  - ➡ Repository for Health Data,
  - ➡ Trustworthy Health Information
  - ➡ Digital Health Promotion (DHP)
  - ➡ Education
  - ➡ Digital Public Goods (DPGs)

- Job creation and innovation
  - ➡ Governmental data sharing
  - ➡ Public-private partnership

- Regulatory Framework
  - ➡ Free access to Knowledge Portal

Information
- education
- health

National Knowledge Portal

Access
- availability
- inclusion

Data
- innovation
- governance