



Future Skills for the 2020s: how can we build the foundation?








Pavel Luksha – GEF
4th HRDC Summit
11 August 2021

THE CONTEXT: TRANSFORMATION UNDER WAY

- COVID has accelerated systemic changes of economies worldwide. Transition towards the next gen economy is under way (4th Industrial Revolution as “part of the package”)
- This presents a massive challenge for the present and future workforce
The readiness to work in new technological environments using new technologies becomes foundational – thus skill pathways from school into work and formation of basic skill such as reading are crucial
- However, skills critical for the transition are not only professional skills – and not even “soft skills”. They are existential or life skills formed by basic education and EDC. This is why the alignment between basic ed & natl skill dev strategy is indispensable
- South Africa is one of the countries that can set up a global role model for such an alignment
- Context of this presentation: the Future Skills 2.0 study accomplished in 2020 as a partnership between GEF & WS that has engaged 802 experts from 49 countries to explore the future of skills in 7 macrosectors covering >90% of the global economy.



COVID-19 AS A 'TRIGGER' OF SYSTEMIC CHANGE

% of Respondents indicating the Factor that will have a significant Impact on Skills in 2020	 MANUFACTURING & ENGINEERING	 CONSTRUCTION & INFRASTRUCTURE	 TRANSPORT & LOGISTICS	 ICT & DIGITAL	 HUMAN & SOCIAL SERVICES	 CREATIVE INDUSTRIES	 AGRICULTURE & ECOLOGY	AVERAGE
Remote Working becoming New Norm	78%	70%	89%	83%	86%	92%	61%	70%
Strict Hygiene / Biosecurity Rules in Production & Delivery	85%	80%	100%	70%	79%	70%	67%	69%
Unemployment, Jobs Disappearing & Reduced Spending	73%	77%	84%	60%	77%	73%	67%	64%
Push to more National Self-reliance & Domestic Supply Chains	50%	67%	79%	46%	60%	42%	50%	49%

- Remote Working becoming “new normal” from mid 2020
- Strict hygiene / biosecurity rules in production & delivery from mid 2020
- Unemployment, jobs disappearing & reduced spending from mid-2021
- Push to more national self reliance & domestic supply chains from late 2022

Key Factors impacting Skills

ONON

1
2
3
4
5

Factor Clusters	COVID ACCELERATED	TECHNOLOGY / SMART	GENERAL	SECTOR SPECIFIC			
ALL SECTORS	MANUFACTURING & ENGINEERING	CONSTRUCTION & INFRASTRUCTURE	TRANSPORTATION & LOGISTICS	ICT & DIGITAL	HUMAN & SOCIAL SERVICES	CREATIVE INDUSTRIES	AGRICULTURE & ECOLOGY
Strict Hygiene & Biosecurity Rules	Strict Hygiene & Biosecurity Rules	Strict Hygiene & Biosecurity Rules	Strict Hygiene & Biosecurity Rules	Remote Working = New Norm	Remote Working = New Norm	Remote Working = New Norm	Resource shortages: Soil Degradation, Biodiversity Loss & Malnutritious Food
Remote Working = New Norm	Cybersecurity & Privacy Threats	Unemployment & Reduced Spending	Remote Working = New Norm	COVID speeds up Digital Transformation & increases Demand for ICT	Strict Hygiene & Biosecurity Rules	Social Media Sensationalism over Competence	Hydroponics
Unemployment & Reduced Spending	Remote Working = New Norm	Customisation & Personalisation	Unemployment & Reduced Spending	Strict Hygiene & Biosecurity Rules	Unemployment & Reduced Spending	Affordable Graphic Technologies	Demand for Organic / Sustainable / Fair Trade + Certified
National Self Reliance & Domestic Supply Chains	Unemployment & Reduced Spending	Mobile Devices & Apps for Collaboration & Management	National Self Reliance & Domestic Supply Chains	Integrated Providers of IT Service Infrastructure	Cybersecurity & Privacy Threats	Unemployment & Reduced Spending	Strict Hygiene & Biosecurity Rules
Cybersecurity & Privacy Threats	3D Printing	Prefabrication & Modular Construction	RFID & GPS Smart Logistics	Unemployment & Reduced Spending	Self Directed & Online & Blended Learning	Social Activism – Demand for Socially Engaged Art / Creative Work	Farm Management Software

Rising Factors for the Decade

2020

1
2
3
4
5

Factor Clusters



COVID ACCELERATED



TECHNOLOGY / SMART



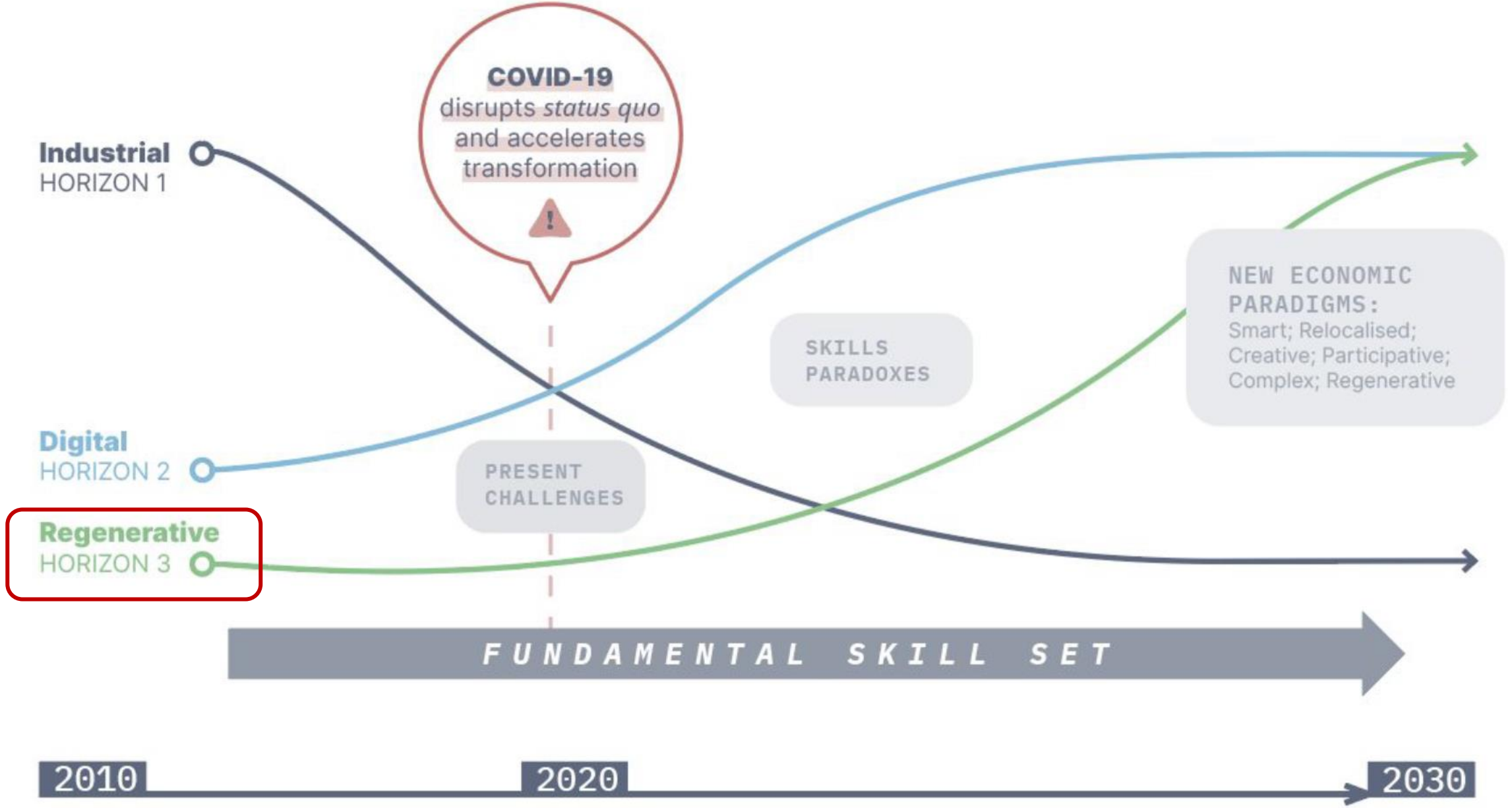
GENERAL



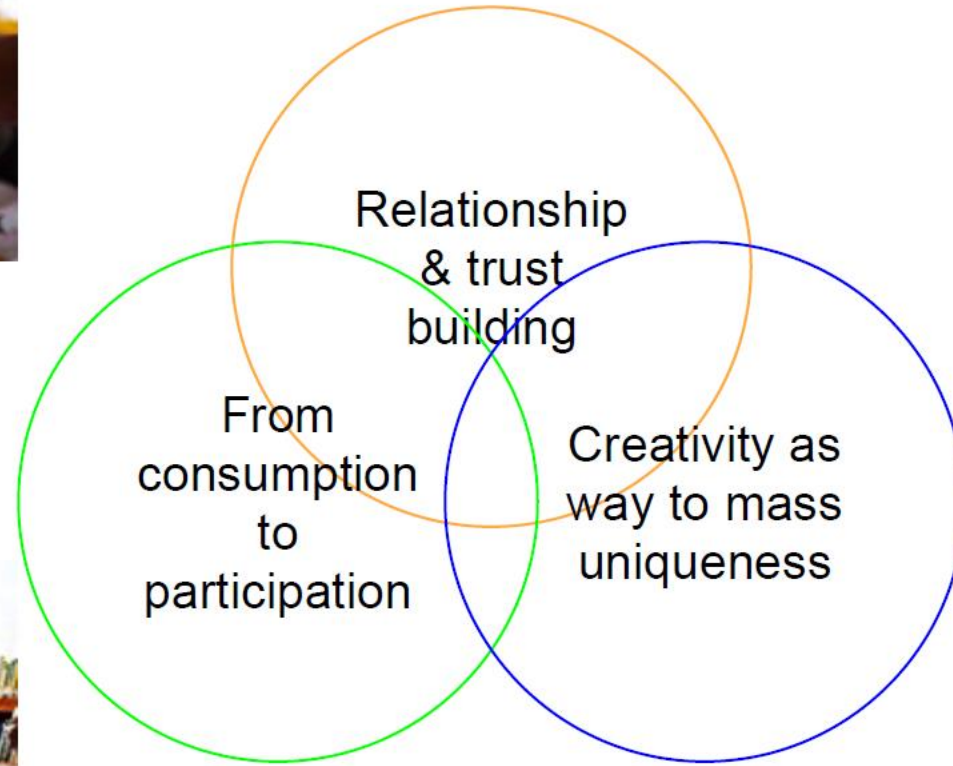
SECTOR SPECIFIC

ALL SECTORS	MANUFACTURING & ENGINEERING	CONSTRUCTION & INFRASTRUCTURE	TRANSPORTATION & LOGISTICS	ICT & DIGITAL	HUMAN & SOCIAL SERVICES	CREATIVE INDUSTRIES	AGRICULTURE & ECOLOGY
Robotics & Cobots	AI Prediction & Self-learning Machines / Production Lines	Smart Infrastructure Sensing Environmental & Digital Metrics	Unmanned Vehicles	Automated Coding	Personalisation of Production	New Human-computer Interfaces (Touch, Brain)	AI Prediction & Self-learning Machines / Production Lines
AI Prediction & Self-learning Machines	Robotics & Cobots	Smart and Life-cycle Optimizing Equipment	Smart Roads	Robotics & Cobots	Robotics & Cobots	Digital Currency replaces Cash	3D Printing
Supply Chain Transparency	Autonomous Manufacturing & RFID logistics	Smart Wearable Tech increases Safety, Collaboration & Efficiency	Integration of Digital Transport Network & IT	Total Digital Monitoring	Ageing Populations: Assistive Technology & Senior Services	Full Sensory Tech & Wearables in Entertainment Experiences, Clothing & Bodies	Full Year Use of Land (Cover Crops, Multi Season Harvest)
New Human-computer Interfaces (Touch, Brain)	Eco Materials & Production Modes Essential	Ecosystemic Supply Chain Approaches	Robotics & Cobots	New Human-computer Interfaces (Touch, Brain)	New Human-computer Interfaces (Touch, Brain)	Decentralisation & Crowdsourcing democratises Creativity	Gene Editing & Epigenetics
Eco Materials & Production Modes become Essential	eCommerce + On Demand Small Batches	3D Printing	Electric Mobility + Battery Tech	AI-created Entertainment	Total Digital Monitoring	AI Prediction & Self-learning Machines / Production Lines	Robotics & Cobots

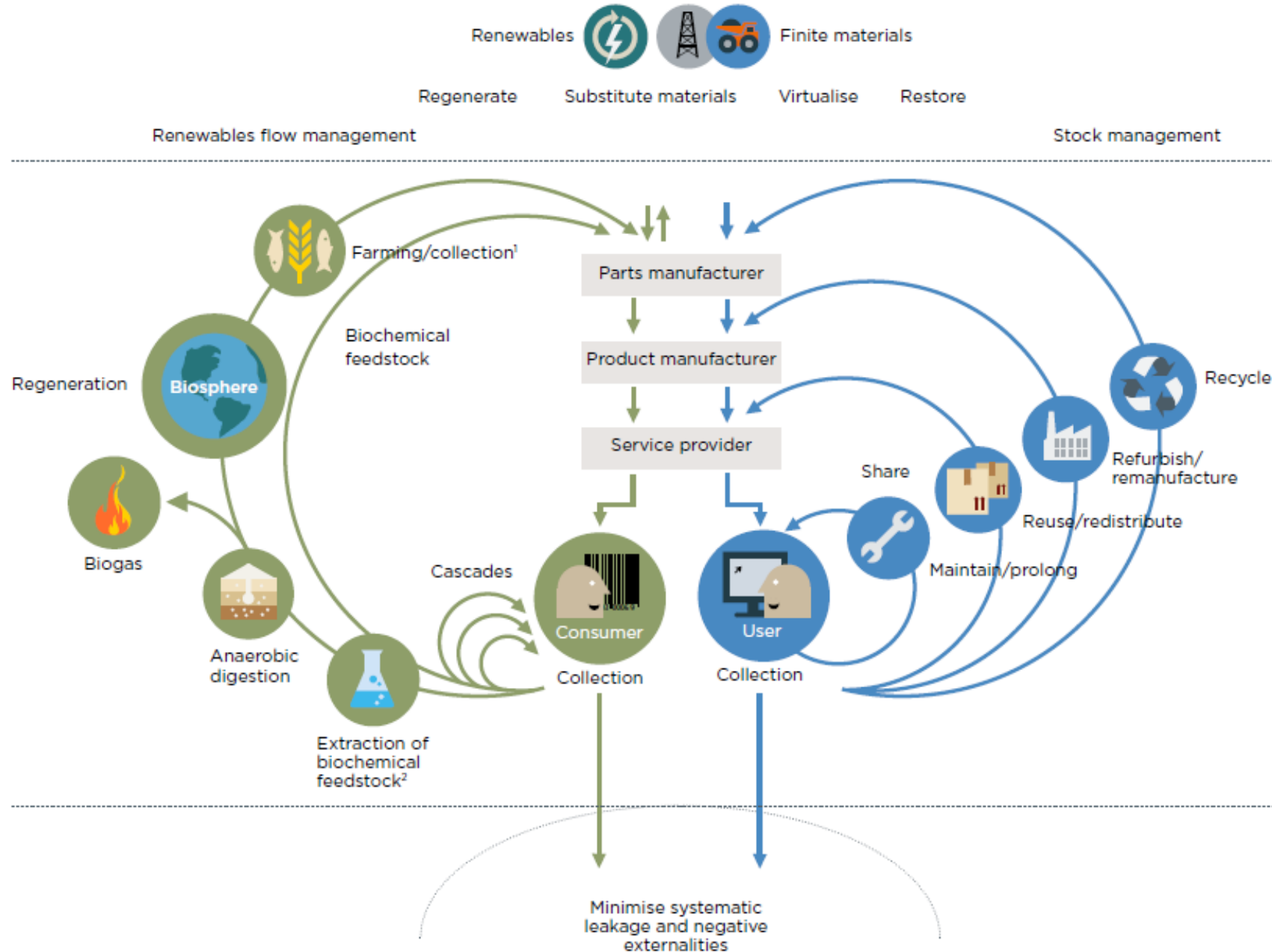
PARADIGM SHIFT: THREE HORIZONS



TRANSITION TO HUMAN-CENTERED ECONOMIES



THE RISE OF REGENERATIVE ECONOMY PARADIGM



TURBULENT YEARS AHEAD OF US: BETTER GET READY!



MAX B'zo

- The disasters are collaborating better than we are!

SEARCH ID: CX904876

CARTOONCOLLECTIONS.COM



Key Skills

2020-2022

1
2
3
4
5

Skills/
Roles
Clusters



TECHNICAL
& DIGITAL



COGNITIVE
FOUNDATIONAL



SOCIO-ECONOMIC
& CULTURAL



GREEN & UNIVERSAL
WELLBEING

ALL SECTORS

Collaboration
(On & Offline)

Facilitation
& Co-creation

Ethical
Practices,
Critical
Thinking,
Understanding
Biases

Diversity,
Cultural
Awareness &
Race Relations

Learning
How to Learn
& Unlearn

MANUFACTURING & ENGINEERING

Collaboration
(On & Offline)

Facilitation
& Co-creation

Big Data
Analytics

CNC Operation
& Programming
(Unified Role)

Digital
Quality
Control

CONSTRUCTION & INFRASTRUCTURE

Recycling,
Rebuilding &
Retrofit design

Ethical
Practices,
Critical Thinking,
Understanding
Biases

Collaboration
(On & Offline)

Environmental
Maintenance
& Green Skills

Mental Health
& Wellbeing
Design Roles

TRANSPORTATION & LOGISTICS

Collaboration
(On & Offline)

Human / Soft
Skills (Social,
Emotional,
etc.)

Ethical
Practices,
Critical Thinking,
Understanding
Biases

Facilitation
& Co-creation

Diversity,
Equity, Cultural
Awareness
& Race Relations

ICT & DIGITAL

Big Data
Analytics

Infrastructure
as a Service
(IaaS)

Facilitation
& Co-creation

Collaboration
(On & Offline)

Cloud Solutions
Architect
& Disaster
Recovery

HUMAN & SOCIAL SERVICES

Human / Soft
Skills (Social,
Emotional,
etc.)

Ethical
Practices,
Critical Thinking,
Understanding
Biases

Storytelling,
Advocacy &
Community
Roles

Resilience Roles
(eg Counseling)

Big Data
Analytics

CREATIVE INDUSTRIES

Activist Art

Facilitation
& Co-creation
of Art / Creativity

Human / Soft
Skills (Social,
Emotional,
etc.)

Diversity,
Cultural
Awareness &
Race Relations

Info Stylist -
helps customize
Presentations
/ Materials for
various
Audiences

AGRICULTURE & ECOLOGY

Collaboration
(On & Offline)

Facilitation
& Co-creation

Diversity,
Equity, Cultural
Awareness &
Race Relations

Cybersecurity
Skills

Habitat
Conservation

Rising Skills/Roles for the Decade

WON

1
2
3
4
5

Skills/
Roles
Clusters



TECHNICAL
& DIGITAL



COGNITIVE
FOUNDATIONAL



SOCIO-ECONOMIC
& CULTURAL



GREEN & UNIVERSAL
WELLBEING

ALL SECTORS

IoT Skills
+ System
Operation

AR / VR / MR
Design,
Engineering,
etc.

Regenerative
& Sustainable
Skills

Blockchain
Systems
Design

Multi-
disciplinary
Cross-sectoral
Catalysts

MANUFACTURING & ENGINEERING

Robotics
Designer /
Integrator

Small Batch
Manufacturer
(VR Design
+ 3D Printing)

Regenerative
& Sustainable
Skills

Navigate
accelerating
Change
(eg New Tech)

Licensed Drone
Operators &
Engineers

CONSTRUCTION & INFRASTRUCTURE

IoT Skills
+ System
Operation

Full Lifecycle
Approaches:
Cost, Social &
Eco Outcomes
Measurement

3D Printing
Designers &
Operators

Health & Safety
Awareness / Skills
(Using AR/VR
Remote Tech)

Lean / Agile
Implementor

TRANSPORTATION & LOGISTICS

Drone
Service
Engineers

IoT Skills
+ System
Operation

Mobility
Adviser: Big
Data, UX &
Intermodal
Relationships

Regenerative
& Sustainable
Skills

Cybersecurity
Specialist

ICT & DIGITAL

Meta
Programming
skills

Data as
a Service
(DaaS)

IoT Architecture
Design

AR / VR / MR
Design,
Engineering,
etc.

UX UI design
/ User-centric
Approaches

HUMAN & SOCIAL SERVICES

UX & Customer
Centric Roles

Training /
Programming
AI

AR / VR / MR
Design,
Engineering,
etc.

Health & Safety
Awareness / Skills
(Using AR/VR
Remote Tech)

New
Communication
Skills (Visual/
Touch/Gesture/
Thought)

CREATIVE INDUSTRIES

New
Communication
Skills (Visual /
Touch / Gesture
/ Thought)

Transdisciplinary
Designers,
Catalysts &
Community
Builders

AR / VR / MR
Design,
Engineering,
etc.

Cross-sectoral
Bridge Role

Storytelling,
Advocacy &
Community
Roles

AGRICULTURE & ECOLOGY

Big Data
Solutions for
Agriculture

IoT Skills
supporting
Agriculture
& Automated
Solutions

Biosystemic
Designer of
Regenerative
Farming
Ecosystems

Designers,
Catalysts &
Community
Builders for
Wellbeing of
People & Nature

Blockchain
Systems
Design

Fundamental Skill Set: What is Critical?



COGNITIVE FOUNDATIONAL

Internal skills of self that help us adapt and thrive in an increasingly complex & uncertain world

- **Adaptability**, Future Thinking & Navigating Accelerating Change (e.g. across technologies), Coping with Uncertainty & Crisis
- **Critical & Creative Thinking**, Understanding Biases, Intellectual Humility
- **Multi-disciplinary Versatility & Systems thinking**, Understanding Complexity & Seeing our Role in Systems
- **Learning to Learn**, Unlearning, Intellectual Humility



TECHNICAL & DIGITAL

Skills that connect to the 2020s tech teality and help use the full potential of digitised workplaces

- **Digital Skills**, including **AI Skills & Big Data**, and **Emerging Technologies** (e.g. Blockchain, AR/VR/MR...)
- **Cybersecurity**
- Programming & Controlling **Robotics / IoT**
- **Tech Integration & Bridging**
- **Neo-crafts & Services** (incl. 3D Manufacturing)
- Basic Skills for Digital: **Mathematics & Logic, Reasoning**



SOCIO-ECONOMIC & CULTURAL

Relational skills that support prospering in teams and across communities & networks

- **Collaboration & Teaming** (On & Offline – incl. Trust Building)
- **Facilitation & Co-creation**
- **Entrepreneurship** (incl. Finance & E-Commerce, Customer Focus...)
- UX / UI Design / **User-centric Approaches***
- **Agile Project Management***
- **Human, Social & Emotional Skills:** Kindness & Compassion, Empathy, Conflict Mediation
- Paperless / Visual Communication
- Interdisciplinary, Cross-sectoral & Cross-cultural **Communication, Storytelling & Advocacy**
- Language Skills



GREEN & UNIVERSAL WELLBEING

Skills that ensure we are building a thriving future for all life

- **Environmental, Practices**, Sustainable & Regenerative — both Technological (e.g. Carbon Footprint Analysis, Lifecycle Management, etc.) & Human (Reconnecting with Nature)
- Awareness & Well-being (incl. Taking Care of Oneself — Mental Health, Intentional Downtime, Self-protection)
- Diversity, Multi-cultural Awareness, Inclusion*
- **Ethical Decision-making***

IMPLICATIONS FOR THE BASIC EDUCATION SYSTEM & BEYOND

Changes in Curriculum & Pedagogy:

Mindset development is critical (open / adaptable mindset, creative thinking, and system thinking are top 3 options), technological & sustainable skills are a priority, and collaborative / team building skills and empathy are of high importance

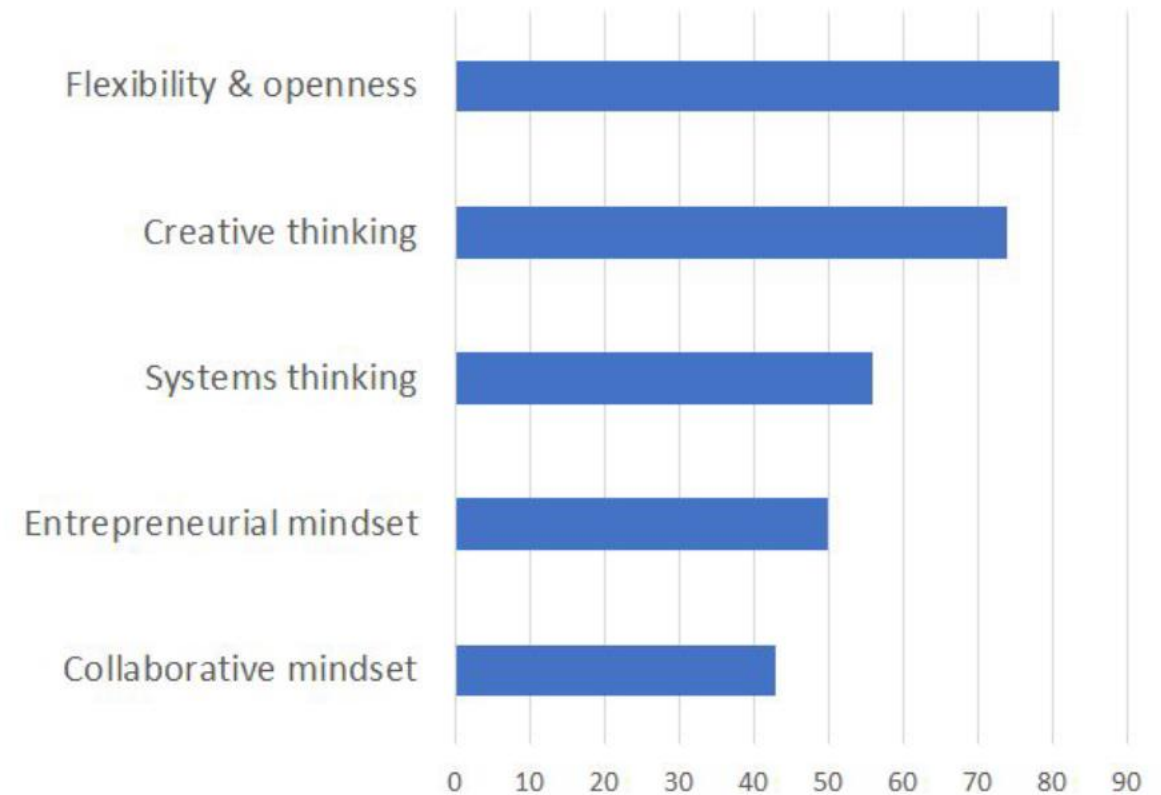
Assessments:

Human skills, creative capacity, life skills (e.g. mindfulness, open-mindedness etc.); Transnational skills assessment (e.g. 'Demonstration Exams' according to WorldSkills standards)

Frameworks:

Learning ecosystems, including multilocation learning environments, community embodied learning models; VET centers / colleges as 'organizations that learn'

Top 5 mindsets for the 2020s



STAKEHOLDERS: WHAT COULD BE DONE?

Teachers:

- *Learn* new teaching methods to empower & encourage collaboration
- *Cultivate* young people's capacity for entrepreneurial skills and *empower* them for independent action
- *Create* local / national / global 'inquiry networks' & share knowledge / methods

▪ School administrators:

- *Create* experimental spaces for future skills, e.g. fablabs and youth business acceleration programs
- *Partner* with colleges & universities to create skill pathways that include future skills
- *Collaborate* with local & global businesses to create 'hybrid learning environments', opportunities for apprenticeship and real life problem solving
- *Pool* resources on future skills teaching with other education and business partners

▪ Policy makers:

- *Encourage* experimentation in schools & skill partnerships around new pedagogies & assessment (soft skills, digital badging etc)
- *Introduce* metrics creating education system accountability for the overall success of economy & society, including the transition to green / regenerative economy, just / inclusive society, and new business / workplace creation





For report & collaboration:
email info@globaledufutures.org
website futureskills2020s.com

“Our tomorrow is the child
of our today... Best to think
about it. Best to shape it
into something good.”

[Octavia E. Butler](#)