

**Pro-aktiewe kurrikulumbestuur vir
21ste eeuse vaardighede**
*Proactive curriculum management
for 21st century skills*

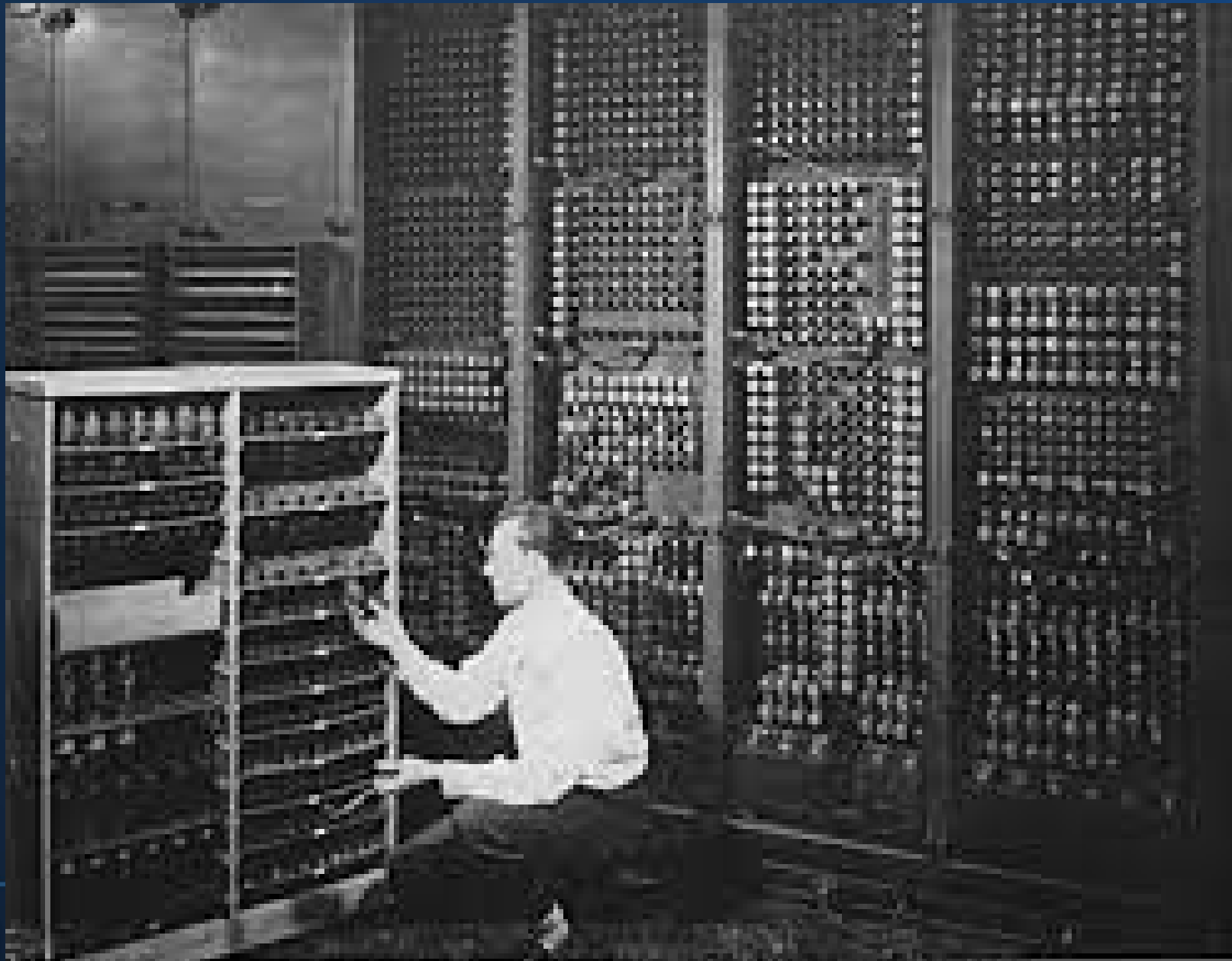


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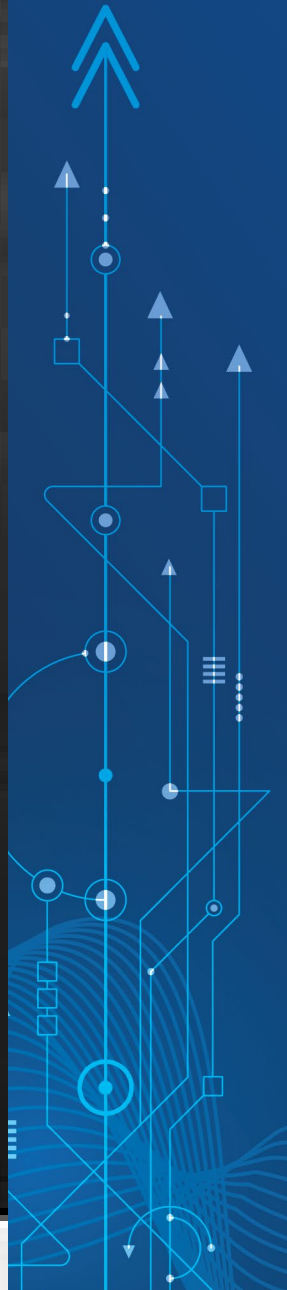
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DIE VERANDERING IN ONDERWYS
THE CHANGE IN EDUCATION

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Replacing a bad tube meant checking among ENIAC's 15,000 possibilities.



Independent
Industry-driven





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Interdependent
digitalized knowledge
societies



What are 21st Century Skills?

21st Century Skills refer to the:

- Knowledge
- Life Skills
- Career Skills
- Attitudes
- Traits that are critically important to learners success in today's world.
- What are the important traits for tomorrow's world?

Critical
thinking

Communi-
cation Skills

Creativity

Problem
solving

Perseverance

Collaboration

Information
literacy

Technology
skills

Media
literacy

Digital
Literacy

Global
awareness

Self-direction

Social Skills

Literacy skills

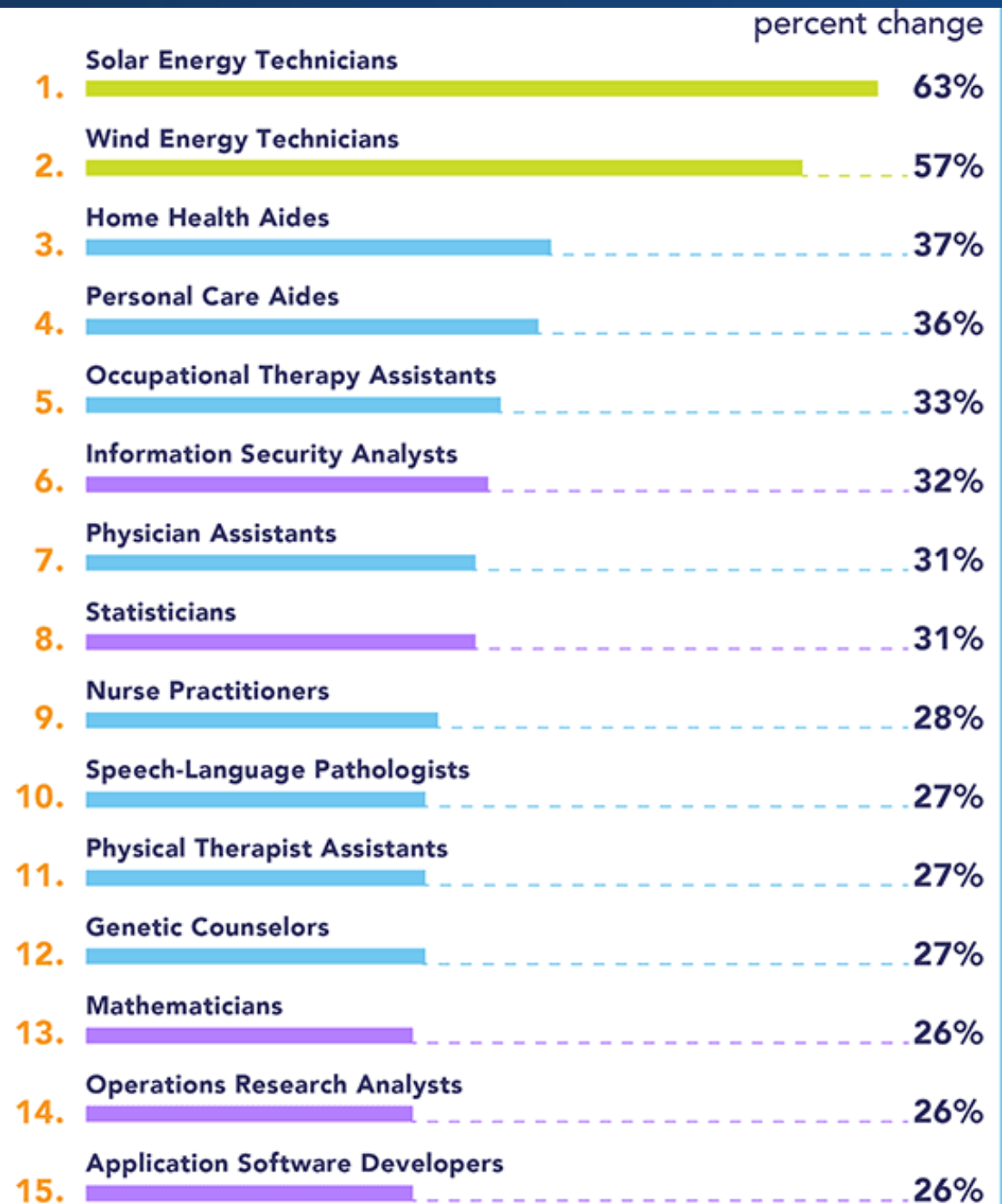
Innovation
and thinking

Preparing learners for jobs that might not yet exist



15 Fastest-Growing Occupations From 2018 to 2028

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Farmer

Farmers will use technology to carefully raise engineered crops. The future of farming is also set to become vertical as creating these spaces in urban areas will help boost food supply.



Self-Driving Car Mechanic

As the direction of travelling in the future becomes more about self-driving cars, these vehicles will not be self-fixing. The mechanic of the future needs to be comprehensive in technology too.



Space Miner

Fossil fuels and other rare elements are running out and will eventually cease to exist on our planet. In the future we may need to use space miners to retrieve rare Earth elements from the Moon or asteroids.



Climate Change Reversal Specialist

A new breed of engineer-scientists will emerge with the ability to rebuild ecosystems around the planet, such as rainforests and ocean beds, as global warming devastates vulnerable landscapes around the world.



Space Junk Recycler

These people will have to identify the orbital locations of where junk is greatest in the atmosphere surrounding Earth. They will then develop cost effective methods to remove it from orbit.



Autonomous Transportation Specialist

These people will monitor and integrate neo-transit into current towns and cities, then monitor the results.



Space Tourism Guide

Voyages into space are beginning to take off with the appearance of Virgin Galactic. Commercial flights to space will become the next top holiday destination.



Drone Manager

In the future, a specialist will be trained to organise, maintain and direct a fleet of drones.



AI Business Manager

The AI sector is booming, however AI cannot sell itself, therefore there is a need for human effort and skill in this department. This role will be in charge of promoting and selling AI to new and existing companies.



Virtual Identity Defender

Advancements in AI could lead to the creation of fake video and audio tapes, putting data at risk. Therefore, in the future, there will be a need for this role where people will use digital watermarks that can be authenticated to prove the truth.



Data Detective

With businesses and large corporations storing more data than ever before, the need for security and data protection continues to grow. This role will require people to go through large data sets and generate answers to business questions.



Virtual Teacher

In the future, teaching will be less about the bricks and mortar school building and will focus more on online classrooms and lessons.



Head of Machine Personality Design

Automation is working to create bots that can be personable with customers. The role of this person will be to ensure the machine or robot has the same personality and taste as the customer, by using quantitative and qualitative market analysis techniques.



Private Industry Air Traffic Control

As drones become more widespread, this type of job will be vital in the future. They need to negotiate and communicate with governments on airspace and boundary limitations.



Internet/Social Media Lawyer

With 5.8 million cybercrimes a year, and Facebook and Twitter incidents reported every 45 minutes, cyber lawyers will see a big pick up in work.

SOCIAL MEDIA – HUMAN INTERACTION



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INTERNET – ACCESS TO KNOWLEDGE



Process large
amounts of
information

Analyse and
select from
information

Online
Plagiarism

Are our current subjects still relevant?



Application
instead of
memorising

What is real and
true?

Solving complex
problems

Deductive
reasoning /
Error analysis

**Skills
needed?**

Learning

Information

Media

Technology

Critical thinking

Communication

Collaboration

Creativity

Flexibility

Initiative

Social skills

Productivity

Leadership

Literacy

Life

S





Bottom up



Top Down



DBE Initiatives

1. Introduction of new subjects:

- Robotics and Coding
- Digital Skills (Grade 8 and 9)
- Entrepreneurship

2. Changing teaching methodology

- Project-based teaching

IS IT POSSIBLE TO CHANGE FROM
TOP DOWN?



2018 Lekgotla

“Our role is to explore and reposition the curriculum and to develop a twelve-year roadmap for the school curriculum to 2030. The priorities of the Sector will also be remapped to respond to the demands of the 21st Century skills and the Fourth Industrial Revolution.”

Dr Grenville Whittle



Bottom up



Top Down



Curriculum management for 21st Century skills



Curriculum management for 21st Century skills

1. Vision for the school
2. Planning for implementation
3. Needs assessment
4. Recruiting and selecting staff members
5. Analysis of existing infrastructure and curriculum programmes



LEADERSHIP

Curriculum management for 21st Century skills

1. Strategies to support teachers with implementation of 21st century skills
2. Create 21st Century learning environments
3. Physical Infrastructure supports 21st Century knowledge and skills
4. Technical Infrastructure – school policy and facilities
5. Budget allocation?
6. Incorporating digital resources in lessons
7. Video / Podcast Library



Infrastructure

Curriculum management for 21st Century skills

1. Start building staff capacity - understand and model the skills
2. Staff professional development
3. Strategies to support teachers with implementation of 21st century skill
4. Mentorships – “people networks”
5. Monitor and track success
6. Partnerships



Personnel

Curriculum management for 21st Century skills

1. Assess learning skills: critical thinking, problem solving, communication, collaboration
2. Assessment feedback – an addition to SASAMS reporting
3. Support learners who are off track – early warning systems
4. Basic literacy skills – additional time



Assessment

Curriculum management for 21st Century skills

1. Methodology more learner centered
2. Construct knowledge and skills in level of thought development
3. Focus on opportunities for collaboration
4. Learning should have context
5. Not necessarily greater focus on computers



Learners



- Be prepared
- Know your direction – vision and goals for the school
- Empowering teachers and learners
- Budget?
- What is possible in your society?
- Research
- Analysis of every subject offered to identify skills
- Alternatives?

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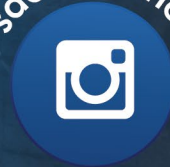
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SAOU National



saouteachers



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