GENERAL EDUCATION CERTIFICATE

Assessing 21st-Century Skills and its Impact on classroom practice

Agenda

- Icebreaker   The alternative uses games.
- Activity 1   **Defining** 21st-Century Skills.
- Activity 2   **Identifying** 21st-Century Skills.
- Activity 3   **Reflecting** on our experiences.
- Activity 4   **Embedding** 21st-Century Skills in teaching and learning.

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ICEBREAKER

Preparing to use our 21ˢᵗ-Century Skills

The "Alternative Uses" game

1 Pick one image from the images on your tables. (1 per person).

2 Spend 1-minute brainstorming as many unconventional (unusual) uses for your chosen object as you can. Please do this independently.

For example, if you picked a picture of a fork, you could think of it as:

- *A comb for your hair*
- *A painting tool that creates three lines at once*
- *A gardening helper for sowing small, evenly-spaced seeds*
- *Unique, dangling earrings*
- *A personal back scratcher*

3 After the minute is up, everyone will share their creative ideas with the group. Consider the following:
- The total number of different uses you thought of.
- How unique your ideas are.

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INTRODUCTION

Setting the scene

Introduction

Why are we here?

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Goal

The goal of this workshop is to enable participants:

- to **define** 21st-Century Skills
- to **use** a simple 21st-Century *observation rubric*

So that participants can effectively and confidently **train other teachers.**
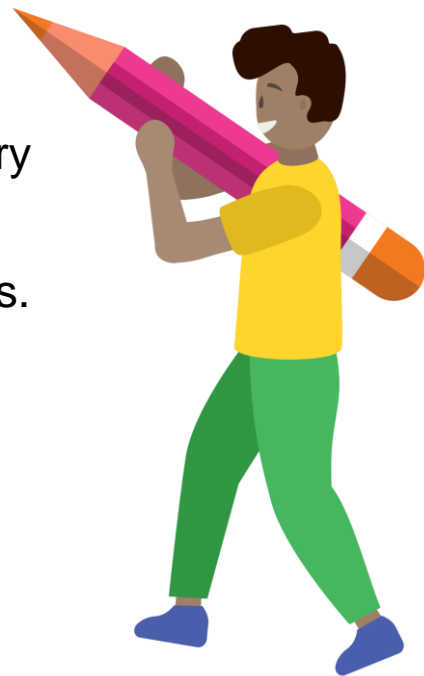

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Introduction

The outcome of this workshop is:

By the end of this workshop participants will be able to:

- Clearly articulate the **definition** of specific 21st-Century Skills.

- Accurately **identify** the presence of 21st-Century Skills.

- Understand **principles from the science of learning** to integrate 21st-Century Skills into their teaching methodologies.

- Understand how to grow the 21st-Century Skills through the **Integrated Projects**

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The curious questions

We will explore how we

1. **Define** what 21st-Century Skills are.

2. **Identify** these 21st-Century Skills

3. **Embed** these 21st-Century Skills in teaching and learning – what the science of learning tells us.

We will answer the Curious Questions

Revisit - What are 21st-Century Skills and <u>why</u> do we need them?

How do we <u>define</u> 21st-Century Skills

How do we <u>identify</u> these 21st-Century Skills?

How can we <u>embed</u> these 21st-Century Skills into our teaching and learning? What are the conditions needed to successfully grow learners' 21st-Century Skills?

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Your participation

Socially Interactive - with opportunities for participants to collaborate and work together

Purposeful - real life, authentic, and meaningful.

Enjoyable - with the right level of challenge, for deep learning to happen we need to go beyond our comfort zone.

Curious - using the curious questions to guide this workshop, we encourage you to ask your own curious questions.

Iterative - due to time constraints there will be limited opportunities to seek feedback, apply feedback, and to iterate.

Actively engaging - providing you with opportunities to think deeply about the content (i.e. this will not be a chalk-and-talk).

Learner agency - providing you with opportunities to make decisions about how you want to tackle the activities and tasks.
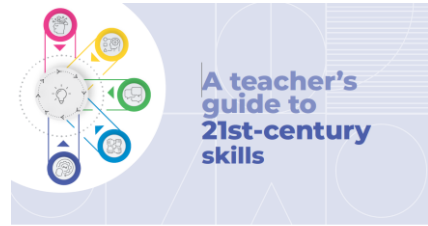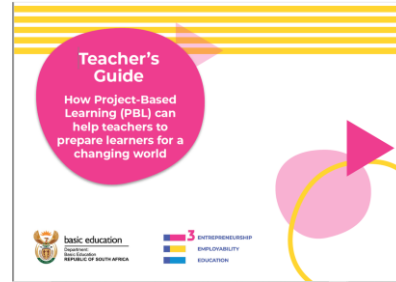
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Further resources
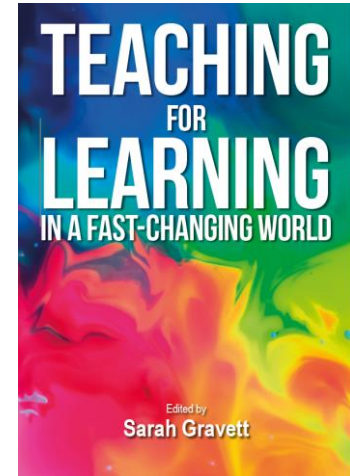
ACTIVITY 1: DEFINING

21st-Century Skills

Let's recap

What are 21ˢᵗ-Century Skills and why do we need them?

Ask the audience

Why do we need to define the 21st-Century Skills

Science of learning: Assessing prior knowledge

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Why do we need to define skills?

Sometimes these skills can be confusing because they can seem intangible, so we are making the intangible tangible by:

- Creating a **common language** to make discussing them *easier*

- Facilitating the process of being able to **identify** them more *easily*

- Creating an *easy-to-use* **framework/rubric**

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Purpose of the 21st-Century Self Assessment

What: Complete the 21st-Century Self-Assessment Template.

Why: To allow you time to think deeply and engage with the content of the 21st-Century Rubric.

So that when we use the rubric in the next activity you are already familiar with it.

Science of learning: attention and engagement, deep thinking

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21st-Century Self Assessment

1. Read each statement carefully: Take your time to understand what each statement is asking about.

2. Reflect: Reflect on how often you do what's described in the statement.

3. Choose your answer: For each statement, pick the option that best fits you (never, rarely, sometimes, often, always)

4. Be honest: There are no right or wrong answers.

21st-century skill	Descriptor	Never (0) I don't do this at all	Rarely (1) I've done this a few times, but not much	Sometimes (2) I do this about half the time	Often (3) I do this most of the time	Always (4) I do this every time without fail.
Critical thinking - Critical thinkers ask questions, find the right information, and apply it to solve a problem	**1.1 Asking questions:** I ask detailed and relevant questions to learn more about a topic or situation.					
	1.2 Evaluating ideas: When faced with a problem, I can effectively pick out which pieces of information are most helpful to find a solution.					
	1.3 Identifying patterns: I use tools like mind maps and diagrams to organize my thoughts and see connections between different pieces of information.					
Communication - Communication is the	**2.1 Non-verbal communication**: I'm good at noticing things that aren't spoken, like how someone's voice sounds or the expression on					

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Discuss in pairs

1. Did anything surprise you about your answers?

2. Which skills are you strongest at, can you give some practical examples to support your answers?

3. Which skills are you not as strong at, what do you think you could do to grow these skills?

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Ask the audience

SHARE YOUR EXPERIENCES AND ASK ANY QUESTIONS

ACTIVITY 2: IDENTIFYING

21st-Century Skills in the classroom

Recap

What is the observation rubric?

The 'Observation Rubric' provides clear, specific definitions that guide the identification of key 21st-Century Skills, that helps you to observe and then record your observations

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Template 1: how to use it

1. Write the name of the participants in the column on the left.

2. Observe the group activity.

3. Every time you see any of the sub-skills, make a mark on your observation template.

	Template 1: 21st Century Skills Observation Tool														
Subject:	**Building Project**														
	1.1 Asking questions:	1.2 Evaluating ideas:	1.3 Identifying patterns.	2.1 Non-verbal communication:	2.2 Articulation:	2.3 Empathising:	3.1 Number of ideas:	3.2 Range of ideas:	3.3 Feasibility of ideas:	4.1 Negotiating roles and responsibilities:	4.2 Pooling resources:	4.3 Engaging with roles and responsibilities:	5.1 Setting goals and planning:	5.4 Monitoring progress against plans:	5.3 Reflecting on planned work:
Class:															
Learners	**Critical Thinking**			**Communication**			**Creativity**			**Collaboration**			**Metacognition**		
Zama	IIII	II	I	II	I	II	IIII IIII	IIII II	IIII II	IIII IIII II	IIII IIII	IIII III	IIII III	III III	III

Round 1 Observing and Building

Group 1 does Task 1

The cellphone tower project

1. **Construct** a cell phone tower at least 50cm high using only the given materials.
2. **Discuss** and **assign** roles and responsibilities within your team.

Make sure the tower can hold three board markers or similar items.

Group 2 does Task 2

Observe 21st-Century Skills

1. **Select** a member(s) of the building team to observe.
2. **Observe** your building project team members.
3. Use the rubric to **track** when a 21st-century skill is shown.

30:00

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Round 1 Observing and Building

Group 2 does Task 1

Group 1 does Task 2

The bridge building project

1. **Construct** a bridge at least 30cm long and 10cm high using only the given materials.
2. **Discuss** and **assign** roles and responsibilities within your team..

Make sure the bridge can hold three board markers or similar items.

Observe 21st-Century Skills

1. **Select** a member(s) of the building team to observe.
2. **Observe** your building project team members.
3. Use the rubric to **track** when a 21st-century skill is shown.

30:00

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Ask the audience

ACTIVITY DEBRIEF, SHARE YOUR EXPERIENCE AND ASK ANY QUESTIONS

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Template 2: Scoring rubric

1. Use your **observations** from the 21st Century Skill Observation Tool (**Template 1**) to help you to decide what score you will give each participant for each sub-skill.

2. Score each sub-skill based on how often it was observed.

3. Record these scores on the Subject Teacher Capturing Template (**Template 2**). Each skill's score is the total of its 3 sub-skills.

Remember, these scores are not for marks, promotion, or progression. They simply state the frequency in which these skills have been practiced and observed. These score does NOT imply any level of competence.

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Template 1: 21st Century Skills Observation Tool

Give a score from 0-4 for each sub-skill.

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The scoring rubric

0   **Never**: The behaviour was not seen

1   **Rarely**: The behaviour occurs but not often

2   **Sometimes**: The behaviour occurs about half the time

3   **Often**: The behaviour occurs most of the time

4   **Always**: The behaviour is consistent and regular

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Template 3: Consolidation

Template 3: Class teacher Consolidation Capturing Tool 21st century skills
Class:

Name	HL			FAL			SS			CA			EMS					LO					NS			TECH			MATHS			SA-SAMS				
	CT	COM	CR	COM	CR	COL	CT	COM	COG	CT	CR	COG	CT	COM	CR	COL	COG	CT	COM	CR	COL	COG	CT	CR	COL	CT	COL	COG	COM	CR	COG	COL 10	COM 10	CRE 10	CT 10	COG 10
	10	9	11	8	9	7	7	6	5	5	4	5	6	7	8	8	9	9	10	10	12	12	10	10	12	11	11	11	12	11	11	8	7	8	7	7
																																###	###	###	###	###
																																###	###	###	###	###
																																###	###	###	###	###

1. **Subject teachers give** their filled 'Subject Teacher Capturing Tool' (Template 2) to the **class teacher**.

2. The class teacher **combines** all scores from different subjects into 'Class Teacher Consolidation Template' (Template 3).

3. If done on Excel, this template will **automatically convert** the scores to a scale of 10, which can then be entered into SA-SAMS.

4. Finally, Template 3 is given to the person in charge of entering scores into SA-SAMS.

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Upload marks to SA SAMS

Maintain Learner Task Assessments (12.3.12)

Grade:	Grade 09	Subject:	21st Century Skills

Class: All **OR Subject Group:**

Term: Term3 : 2023/07/18 - 2023/09/29 **Sorting:** Alphabetical

Learner Filter: All Learners

SysTest: Random Marks

21st Century Skills Class : All Term3 : 2023/07/18 - 2023/09/29 All Learners Patch Version: 23.1.0	TASKS	TASK 1 Collaboration	TASK 2 Communicati on	TASK 3 Creativity	TASK 4 Critical Thinking	TASK 5 Metacognitio n				
	Activities									
	Weighting	20	20	20	20	20				
Marks: -1 = Absent, -2 = Not Captured	Total Mark	10	10	10	10	10	TOTAL Weighted Mark	Term %	Level	Report Term
Include in SBA Year Mark										
	Term /Date	Term3 2023/09/15	Term3 2023/09/15	Term3 2023/09/15	Term3 2023/09/15	Term3 2023/09/15				
No	Acc No	Learner	Gender	T1	T2	T3	T4	T5		100	

Ask the audience

SHARE YOUR EXPERIENCES AND ASK ANY QUESTIONS

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ACTIVITY 3: REFLECTING

What did we learn?

Activity 3: Why should we reflect

"We do not learn from experience … we learn from reflecting on experience"

John Dewey

Activity 3: Let's reflect

- Did you observe all skills in 20 minutes?

- What did you find challenging?

- What did you like about this?

- What questions do you have?

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ACTIVITY 4: EMBEDDING

Understanding the learning environment and conditions needed to grow and then measure the development of 21st-Century Skills.

Objective 2

How can we <u>embed</u> these 21st-Century Skills into our teaching and learning?

Understanding the conditions needed to successfully grow learners' 21st-Century Skills.

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Activity 4: 21st century teaching and learning

21st-century **learners**

require

21st-century **teachers**

using

21st-century **approaches**

(e.g. integrated projects)

Who are self-directed as they identify and solve problems and create value for everyone.

Activity 4: 21st century teaching, creating significant learning experiences

Teaching is ultimately about guiding and supporting meaningful learning, which leads to *significant learning* experiences for learners.

"Significant" is learning that is…

Meaningful - it is relevant and relatable to learners' lives.

Long lasting - it is not easily forgotten.

Transferable - learning that can be applied to different situations and contexts.

2013 - Dee Fink, Significant learning experiences

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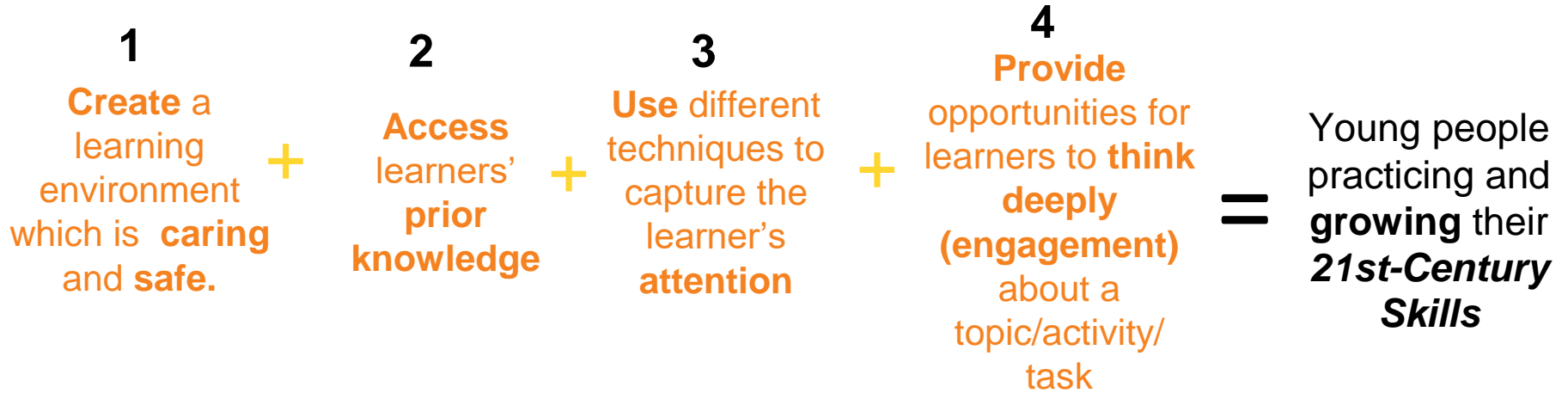# Activity 4: How do we create significant learning experiences? What does the science say?

Insights from the science of learning indicate that there are FOUR fundamental principles of learning that are common to how all humans learn.

Embedding these can lead to learners practicing and growing their *21st-Century Skills* because they experienced what we call…
significant learning

A recipe for significant learning

THE HOW?

Insights from the science of learning tell us that learning happens best when we…

1
Create a learning environment which is **caring** and **safe.**

+

2
Access learners' **prior knowledge**

+

3
Use different techniques to capture the learner's **attention**

+

4
Provide opportunities for learners to **think deeply (engagement)** about a topic/activity/ task

=

Young people practicing and **growing** their *21st-Century Skills*

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The ingredients to embed 21st-Century Skills

THE WHAT?

What ingredients should we include when we design significant learning experiences…

S — Ensure **S**ocial Interaction

How can I create opportunities for social interaction in my lessons?

P — Make learning **P**urposeful

How is this activity or the project as a whole relevant and relatable to my learners?

Access **P**rior Knowledge

How am I finding out what learners already know and what their perceptions are?

E — Create **E**njoyment

How can I strike the right balance between challenge and manageability, so that learners have the opportunity to practice their resilience as they persist through challenges, getting to the joy as they eventually succeed?.

C — Instill **C**uriosity

How can I design activities that stimulate curiosity and engagement?

I — Opportunities for **I**teration

How can I effectively create opportunities for learners to seek and apply feedback, iterate their ideas throughout the course of the project/task.

A — Opportunities for **A**ctive Engagement

How can I ensure that the activities I've designed for this project effectively promote active engagement among my learners?

L — **L**earner autonomy

How can I encourage and support learner decision-making and self-directed learning.

*I.e. the S.P.E.C.I.A.L. learning environment elements are the ingredients for creating **significant learning experiences.***

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Leading to young people practicing and **growing** their **21st-Century Skills**

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Integrated Projects and practicing 21st-Century Skills

The integrated project is

a way of teaching that encourages learners

to **work together**

to **solve real world**, **relevant problems** in doing so **practice and grow**

21st-Century Skills through integrated projects.

What does the evidence tell us about 21st-Century pedagogies?

On high-stakes tests, Project-based Learning students perform as well or better than traditionally taught students.

Parker et al., 2011

Students demonstrate better problem-solving skills in Project-based Learning than in more traditional classes and are able to apply what they learn to real-life situations.

Finkelstein et al., 2010

Students learning through Project-based Learning retain content longer and have a deeper understanding of what they are learning.

Penuel & Means, 2000; Stepien, Gallagher & Workman, 1993

In specific content areas, Project-based Learning has been shown to be more effective than traditional methods
for teaching math, economics, language, science, and other disciplines.

Beckett & Miller, 2006; Boaler, 2002; Finkelstein et al., 2010; Greier et al., 2008; Mergendoller, Maxwell, & Bellisimo, 2006

Playful learning can be implemented through a number of pedagogical practices such as Project Based Learning, where learners construct knowledge by exploring a real-world problem that is often driven by learners' interest in inquiry. For this reason, playful learning is necessary for ALL learners at any grade.

Hirsh-Pasek, Hadani, Binkoff, Golinkoff (2020),

Project-based Learning shows promise as a strategy for closing the achievement gap by engaging lower-achieving learners.

Boaler, 2002; Penuel & Means, 2000

Students demonstrate better problem-solving skills in Project-based Learning than in more traditional classes and are able to apply what they learn to real-life situations.

Finkelstein et al., 2010

Project-based Learning students also show improved critical thinking.

Beckett, G. & Miller, P. (Eds.) (2006). Tretten, R. & Zachariou, P. (1997). Horan, C., Lavaroni, C., & Beldon, P. (1996)

Through Project-based Learning experiences, students improve their ability to work collaboratively and resolve conflicts.

Tretten, R. & Zachariou, P. (1997) ChanLin, L. (2008).

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Developing learners 21st-Century Skills

The *creation* of the **learning environment** which is a **caring** and **safe.**

+

The *implementation* of the **learning practices** we call S.P.E.C.I.A.L.

+

The *application* of the **pedagogy** such as the integrated project

=

Lead to young people practicing and **growing** their *21st-Century Skills.*

The tip of the iceberg…

The integrated project - what you see on the surface

The science of learning, S.P.E.C.I.A.L. and everything that **underpins** the project and leads to learners developing their 21st-Century Skills and becoming prepared for success in a changing world.

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Ask the audience

SHARE YOUR EXPERIENCES AND ASK ANY QUESTIONS

Thank you.