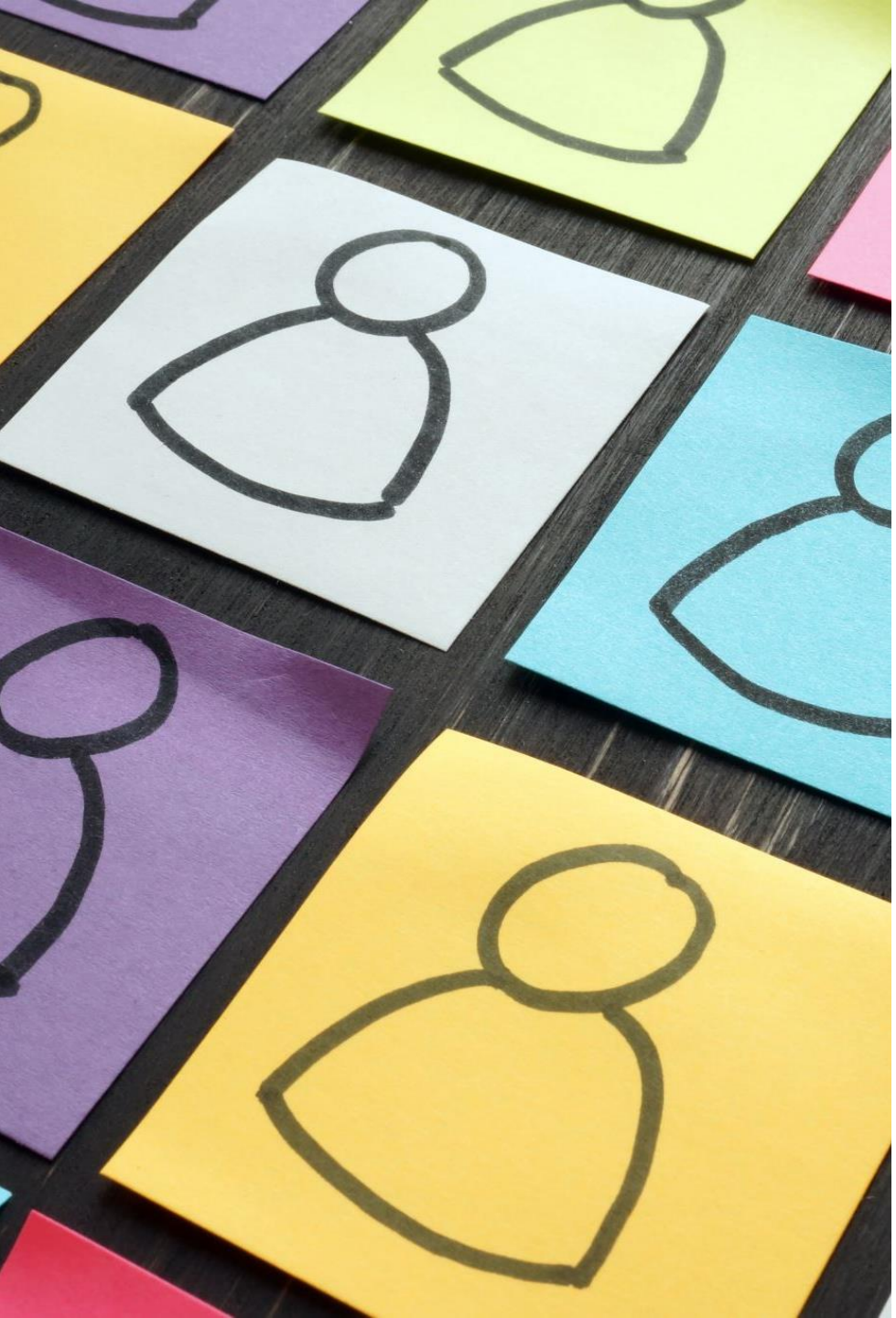
THINKING THROUGH PEDAGOGY IN GAMING FOR LEARNING

Define tomorrow.

UNISA university of south africa



OUTCOMES OF PRESENTATION

- Understand principles of game based learning and its integration into gamification
- Identify relevant learning theories that underpin gamification
- Apply the principles of relevant theories in gamifying a course.
- Apply the Werbach's six-step framework to gamify a course/ module/ project.

Activity 1: What are the key principles in a game? (6 Min)

Think back of any game that you played in the past or recently . Briefly describe the game , what was the key principles in the game ? How did it make you feel?

Pointers to activity 1

*Gamification is the use of **game elements, mechanics and design techniques** in non-game scenarios to motivate people.*

Principles of gamification

Principles of gamification	Design elements
Challenge : opportunities for learning/ growth	Points, rewards, leaderboards, Feedback, Progress bars
Interactivity: Immediate feedback	Avatars , role play ,
Goal orientation	Points, rewards, leaderboards, Feedback, Progress bars
Social Connectivity : opportunities to interact with others	Leaderboards, social engagements, avatars,
Achievement: Recognition of efforts / accomplishment	Points, rewards, leaderboards, Feedback, Progress bars, bonuses., levels , onboarding
Reinforcement: Structure of rewards based on performance	Points, rewards, leaderboards, Feedback, Progress bars, bonuses., levels , onboarding
Fun orientation: Creating interest, curiosity and enjoyment	Points, rewards, leaderboards, rewards, avatars , storyline narrative, role play

Learning theories in gamification

Grounding the gamification design in learning theory , is more likely to achieve favourable results (Kapp, 2021)

Constructivism, cognitivism, behaviourism, connectivism,

If game elements provide meaningfulness to participants , then the gamification process is more likely to succeed (Gupta and Goyal, 2022)

Gamification: An emerging pedagogy around student engagement and learning

Learning theories / approaches underpinning gamification

Motivation

Intrinsic/ extrinsic

Extrinsic: Rewards, badges, or points

Intrnsic: Creating meaningful goals for which the user can achieve at a suitable level before progressing to a next level

Engagement

the sense of belonging to the community/activity, competition factor between friends/colleagues, and love/hate of the event

Self determination

Motivation

Well structured activities

Clearly defined goals

Tasks should support mental growth and promote self efficacy, freedom,

Experience compwtence, sense of masdtery

Community of practice/ connectivism

Focus on teach/ learn process

Knowledge and skills passed from one to another

Technological enablers

Cooperation/ collaboration

Activity 2: Reflection : Paired activity (6 minutes)

Reflect on different ways that people could be motivated? Think of some tasks that you might want someone, perhaps your child/siblings to do . What can you do to motivate someone to do the task.

One strategy might not always work but see if you can think about at least two different approaches to motivate that person to take the action.

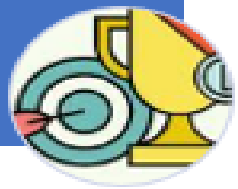
Six 6Ds Design Framework (Werbach & Hunter, 2013)

1. **Define** the outcomes that you want to achieve
2. **Delineate** the target behaviors that you expect from the users
3. **Describe** your player's profile (interest, what drives them)
4. **Devise** activity loops (the process that the users have to follow: ENGAGEMENT/ PROGRESSION)
5. **Don't** forget the fun (think what make your users return) and
6. **Deploy** the appropriate tools (how the interaction will be measured, score systems, badge assignations, etc.)

Design framework for gamification (*Adapted from* *Werbach's six-step gamification design)*

- Use and apply digital tools for efffective communication and collaboration for personal and professional life

Defining outcomes



- Motivated and engaged students
- Problem solvers: challenges
- Competitors

Delineate target behaviour

- Students: Majority from Africa
- Academics
- Demographics

Describe your players

- Engagement : Ongoing feedback, motivation, attempts to try
- Progression: tracking the progress using progress bar: measurement to let learners track their progress
- Each level becomes progressively difficult

Devise activity loops

- Rules of game: Avatar/ character
- Rewards and excitement
- Scores and points
- Ranking: Competition
- Challenges: Overcome the barriers
- Celebration when the badges are earned in all lessons

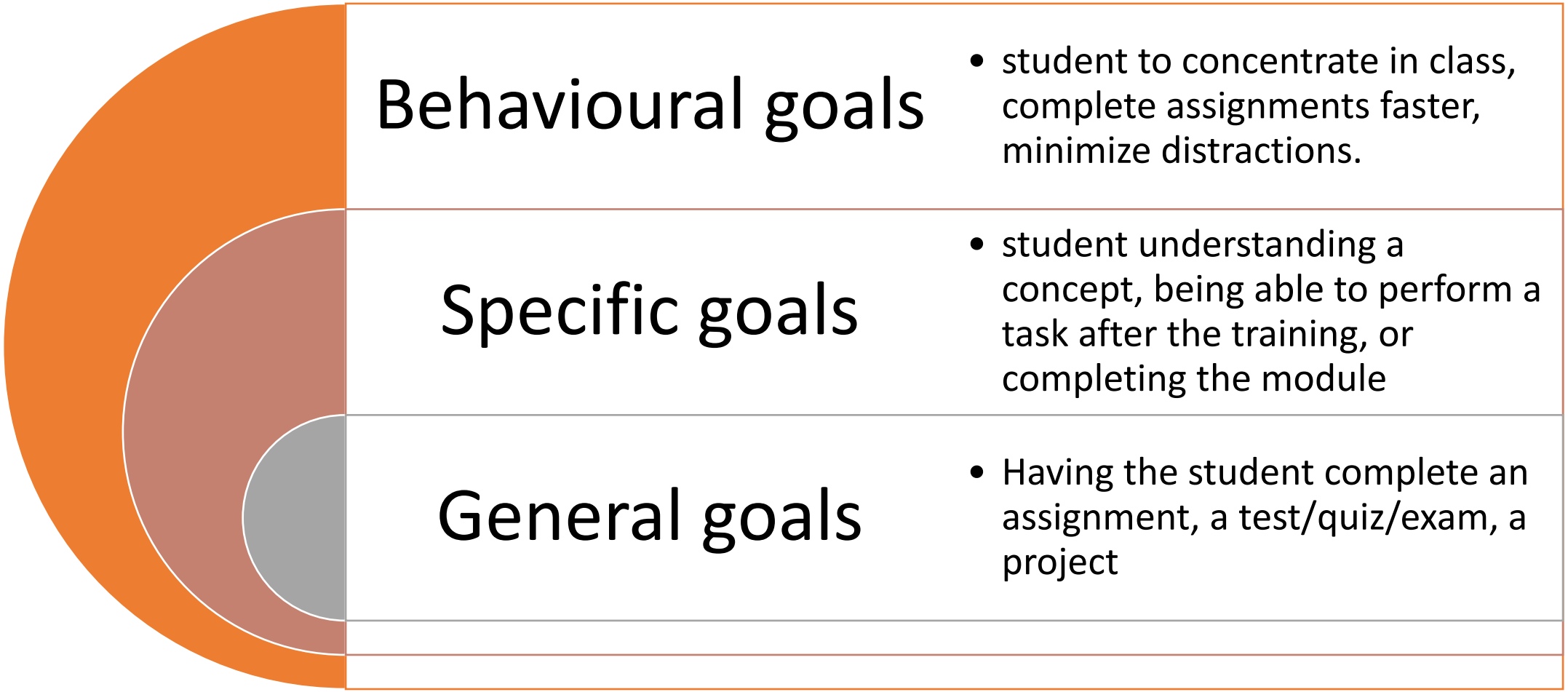
Design fun

- Badges: sugar, maize, millet, sorghum
- Marulas
- Leader boards
- Level up

Deploy appropriate tools

1. Defining the Learning outcomes.

- The instructor defines clearly what the student needs to accomplish by completing the course



Activity 3 : Work with a partner next to you. Categorise the outcomes into generic, specific, behavioural (6 min)

Purpose of the Digital Literacy MOOC

- The purpose of the digital literacy course is to equip students with the key competencies in the use of digital technology to access learning opportunities. Competent participants will be able to pursue their chosen careers and everyday interests and contribute meaningfully to society as 21st century citizens. Digitally literate participants learn to become independent and confident users of technology, and will develop critical and analytical attitudes to choose appropriate digital tools for specific needs

Specific learning outcomes could include the students being able to

- Understand and apply foundational digital concepts that will help you master more advanced topics
- Navigate safely and confidently between online sources, and the e Learning management systems and platforms.
- Manage the internet searches and create content using a range of digital tools and applications effectively.
- Create , edit and format documents
- Share knowledge, content and resources through a variety of digital devices and applications
- Communicate, collaborate and network with others using varied digital devices
- Earn a badge upon completion of the coirse.

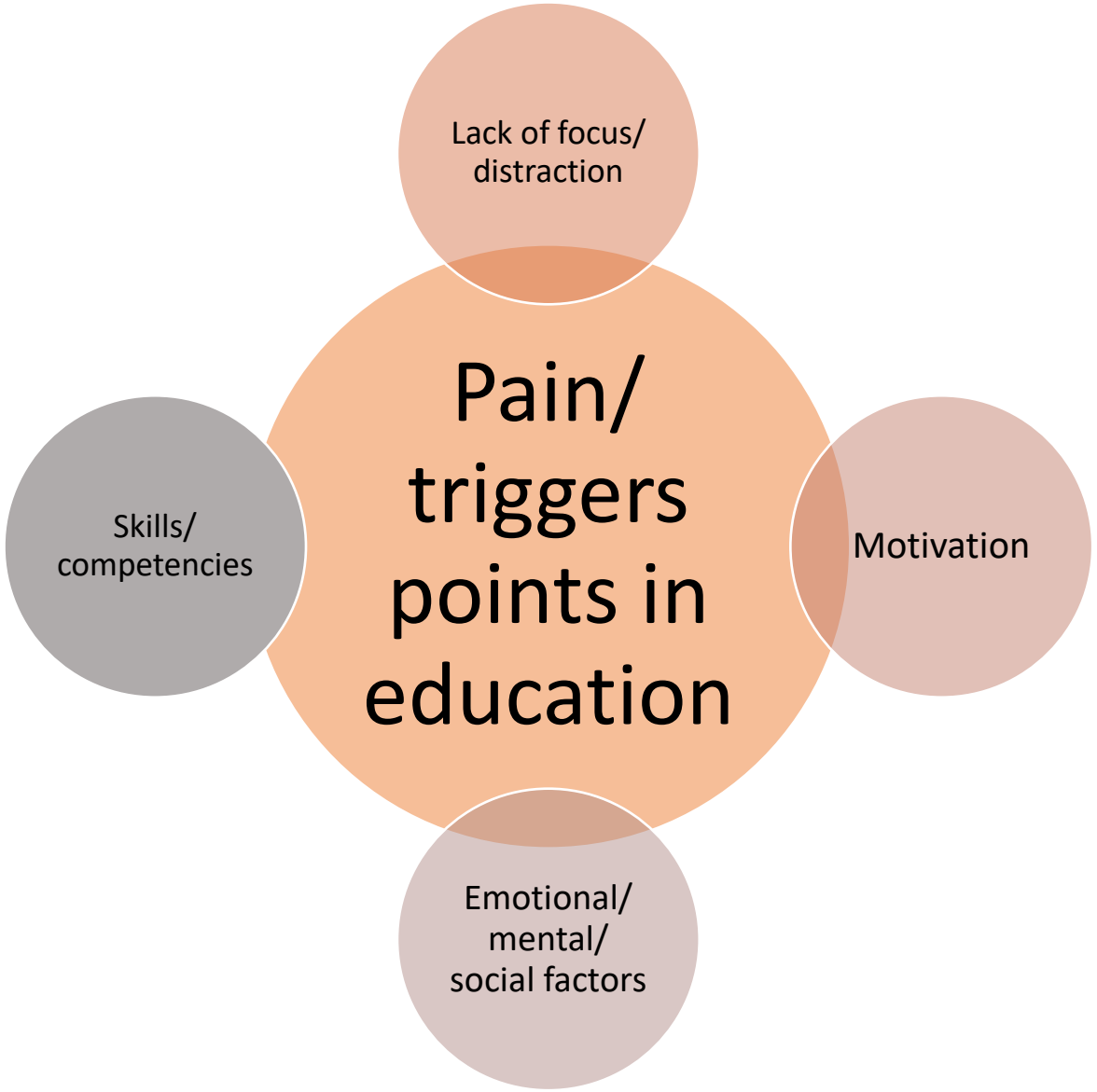
Describe your students

- By knowing the type of learners in your module, it is possible to create a gamified learning experience that will appeal to them.
- General information the designer can always seek from the group of learners are:
- What is the existing level of knowledge of the learners?
- The demographic classification of the learners
- Their technical know-how of e-learning gamification.
- What can motivate the learners to bring the desired change or perform the desired actions?

Activity 3 (5 min)

Reflect on your students . Identify common pain points/ triggers experienced by Unisa students .

Common pain points



Devise your activity loop

- Structure the experience: Two types : Engagement and progression
- **How can the learning outcome be broken down and what are the pain points?**
- Stages and milestones are powerful tools that enable instructors to sequence

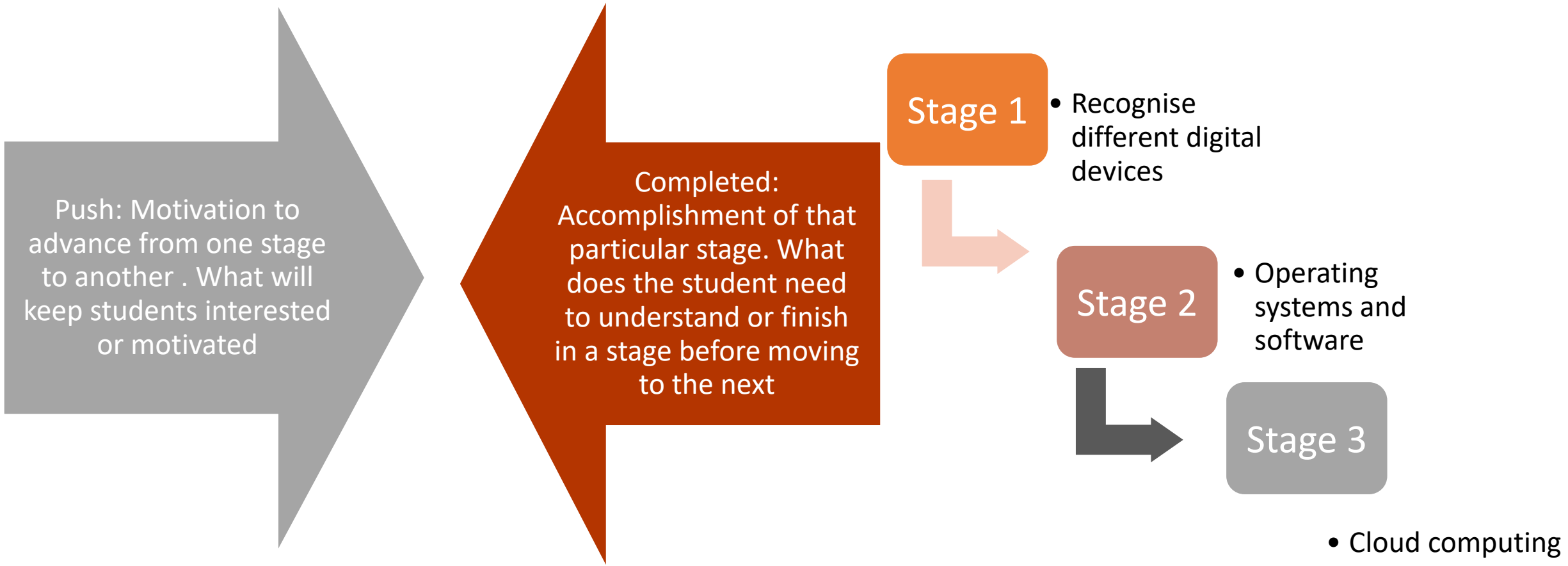
For e.g. The digital literacy course.

Outcome: Understand and apply foundational digital concepts that will help you master more advanced topics

- Stage 1: Identify / recognise different digital devices
- Stage 2: Operating systems and software: You can continue to the next activity
- Stage 3: Document editing applications: Would you like me to lead you to the biggest marula tree in the reserve .Then you must earn points . Answer the question, and you will be rewarded. Continue the activity below .

PROGRESSION LOOP

- **PROGRESSION LOOP**



Creation of the content

The educational content should to be interactive, engaging and rich in multimedia elements.

- **Multiple performances** – the learning activities need to be designed so that students can repeat them in

case of an unsuccessful attempt. It is very important to create conditions and opportunities to achieve the ultimate goal. As a result of repetitions students will improve their skills.

- **Feasibility** – the learning activities should be achievable. They have to be tailored and adapted to students' potential and skill levels.

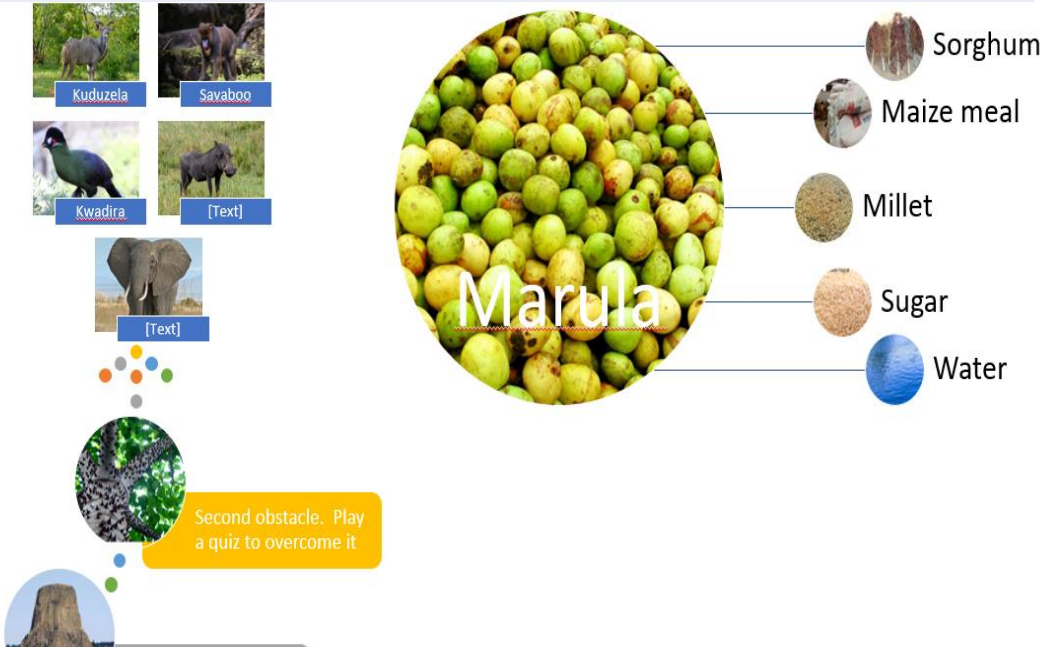
- **Increasing difficulty level** – each subsequent task is expected to be more complex, requiring more efforts from students and corresponding to their newly acquired knowledge and skills.
- **Multiple paths** – in order to develop diverse skills in learners, they need to be able to reach the objectives by various paths. This allows students to build their own strategies, which is one of the key characteristics of the active learning.

DECIDING ON TOOLS

Once the stages/milestones have been identified, the instructor can more easily judge which stages, if any, can be gamified, and how. Questions an instructor should think about while considering gamification include:

- Can a **tracking mechanism** be applied to this specific stage?
- What would be the **currency** and what determines the accomplishment of a level?
- Are there clear **rules** that can be implemented?
- Does the overall system give the student and/or instructor **feedback?**

CONTEXTUALISING GAMING ELEMENTS: A FRAMEWORK FOR IMPLEMENTATION (Werbach and Hunter, 2012)

Steps	Description	Implementation
Step 1: Define Outcomes	Communicate and collaborate through engaging in digital networks for learning, research and everyday requirements	Lesson 5: Use of online Collaboration tools You will know if you achieved the outcomes of this lesson if you acquire a Maize badge.
Step 2: Delineate Target behaviours	Engaged and motivated learners. Through activities and rewards . Students are rewarded with points/ converted to marulas / then badges	Lesson introduces students to Kuduzela (kudu) from the Kruger National Park. Has marula trees, Obstacles: thorn trees/ towers. After successfully completing the games , you get to the maize badge
Step 3: Describe players	Diverse students (age, gender, experience; abilities) mostly from South Africa,	
Step 4: Devise your activity loops	Two types of Loops: Engagement loops (Motivation, feedback, taps, etc, immediate feedback) Progression loops: increasing challenges , to move from one level to the next	
Step 5: Don't forget the fun	Game dynamics. Overcoming obstacles , removing barriers	
Step 6: Deploy the	Tracking mechanisms: Points, badges,	

CONTEXTUALISING THE GAMIFICATION ELEMENTS

LESSON 5: COMMUNICATION AND COLLABORATION

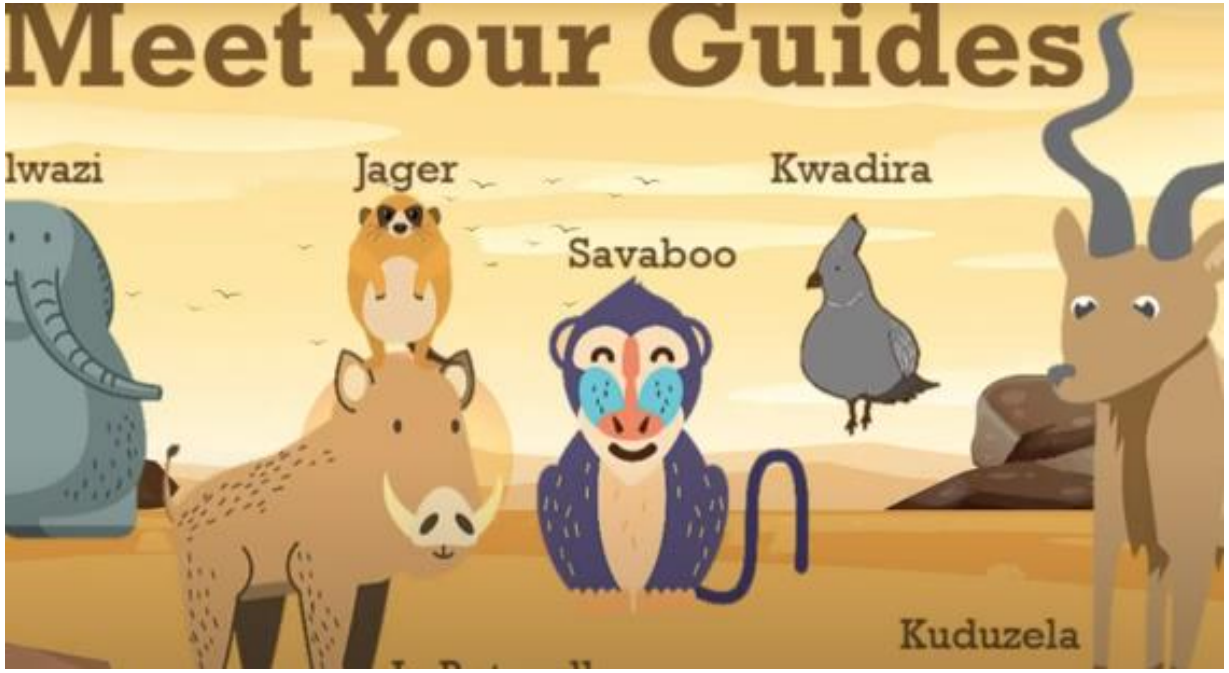
Character : Kuduzela, the kudu from Kruger National Park .

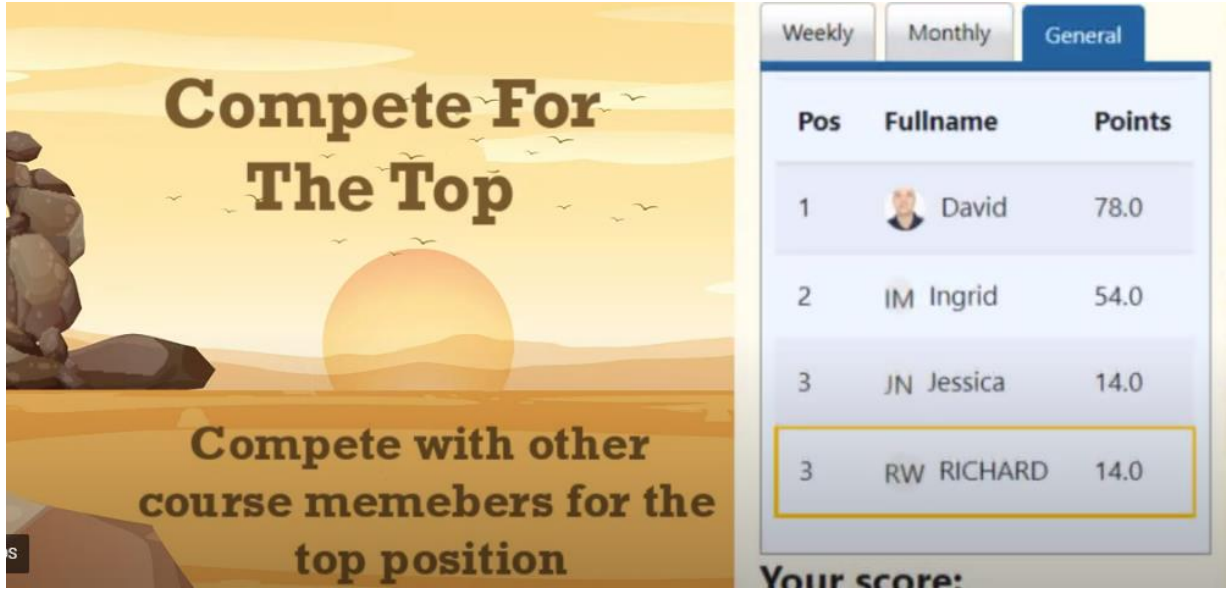
Goal: The park has many marula trees with lots and lots of ripe, juicy and sweet marulas.

Challenge: There are many obstacles such as towers, thorn trees, etc in front of the marula trees.

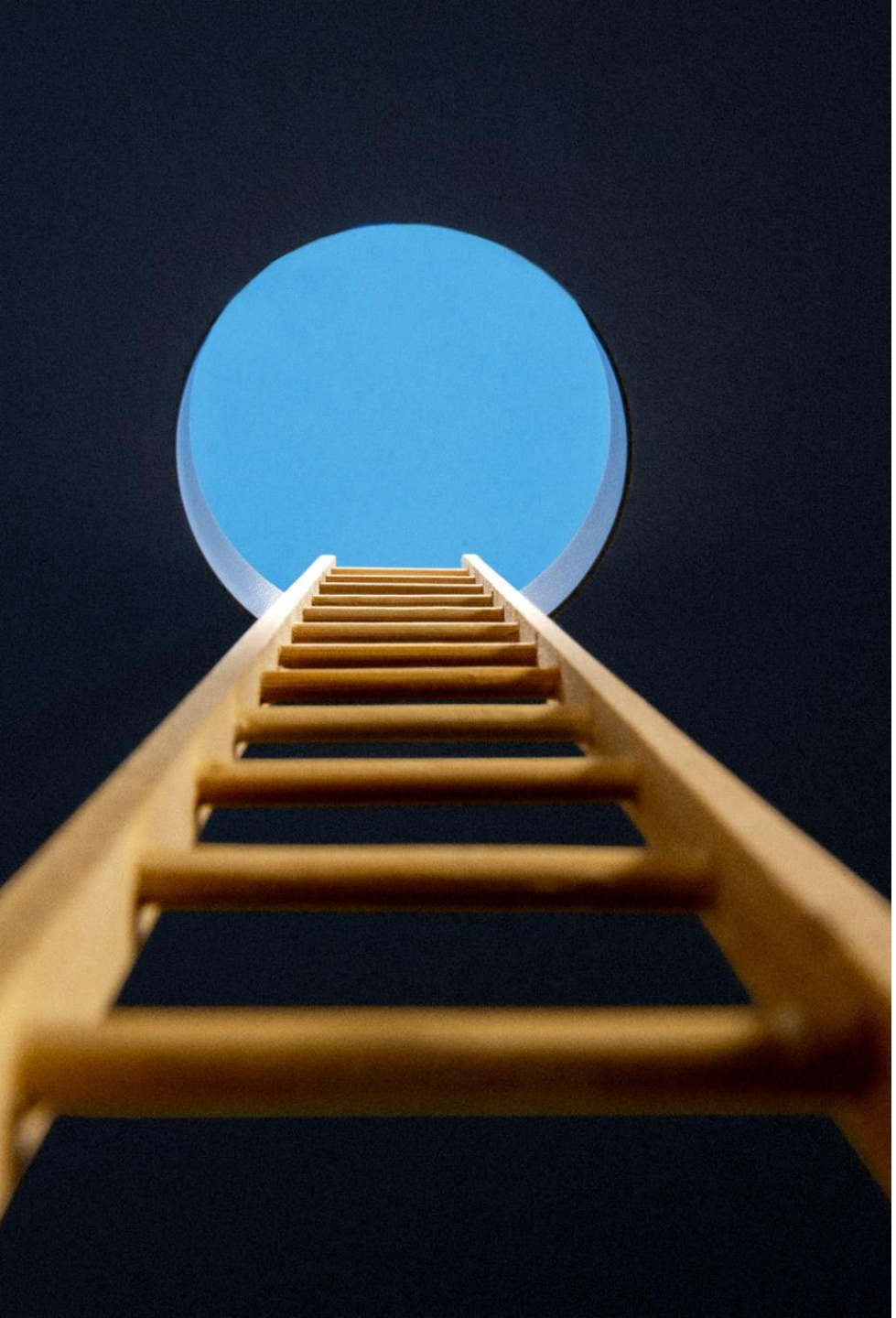
Reward: After completing all the games, you will finally locate the treasure for this lesson 5, which is, the **MAIZE BADGE.**


Earn Your Lesson Badge
Achieved
Water
Achieved
Productivity applications
Sorghum
Achieved
BASIC NAVIGATION
Millet
Achieved
Content sharing
Sugar


Meet Your Guides
Jager
Kwadira
Savaboo
Kuduzela


Compete For The Top
Compete with other course memebers for the top position
Weekly
Monthly
General
Pos
Fullname
Points
1
David
78.0
2
IM Ingrid
54.0
3
JN Jessica
14.0
3
RW RICHARD
14.0


Level Up!!
Earn Marulas For Your Health Beer
10
3
552xp
Participate in the course to gain marulas and level up!
RECENT REWARDS
9xp Course module viewed
9xp H5P content viewed



- *"Gamification is the design that places the most emphasis on human motivation in the process. In essence, it is Human-Focused Design (as opposed to “function-focused design”)." - Yu-Kai Chou*

- *80% psychology and 20% technology*