AN AFRICAN PERSPECTIVE: CONTEXTUALIZING THE CURRENT TRENDS IN GAMING FOR LEARNING

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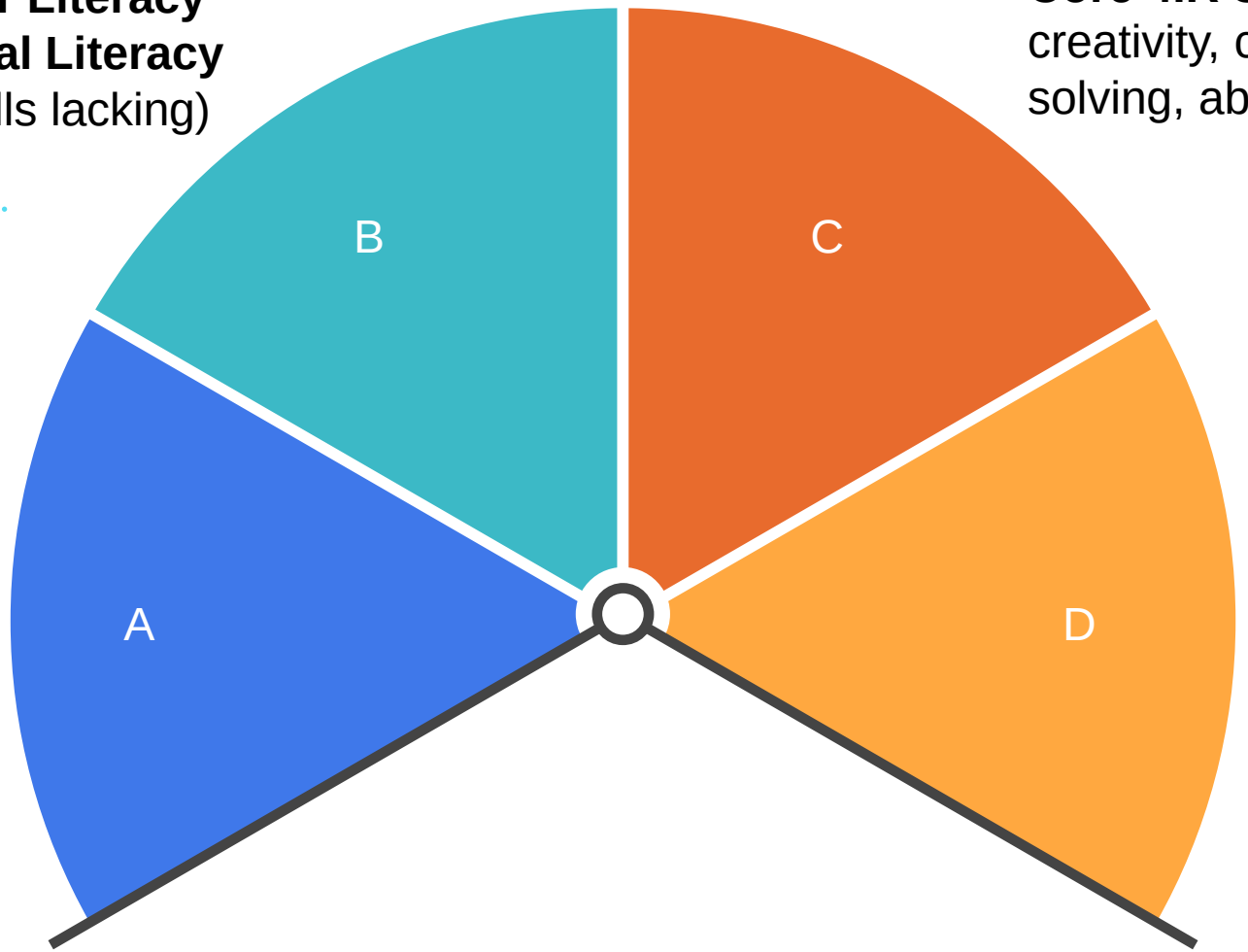
Define tomorrow.

UNISA university of south africa

1. UNDERSTANDING THE UNISA STUDENT CONTEXT (SKILLS)

Computer Literacy and Digital Literacy (Basic skills lacking)

Core 4IR Skills (Critical thinking, creativity, collaboration, problem solving, abstract thinking not present)

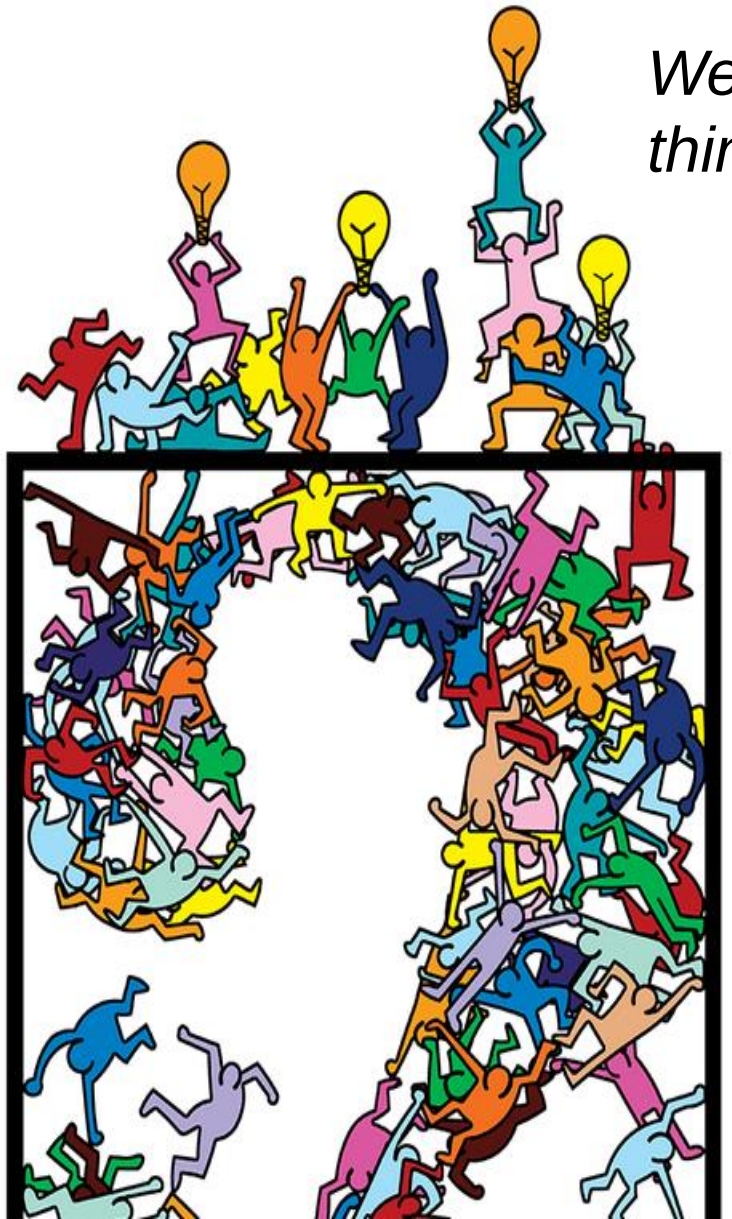


Literacy and Numeracy Skills (8/10 undergraduate students cannot read at the appropriate levels)

Online Participation: Poor participation – just in time learners compromises the academic project

NB: Designing innovative online curriculum and not addressing these student challenges will increase the skills deficits among students and continue the perpetuation of an inadequate e-learning experience (typified as an African online experience).

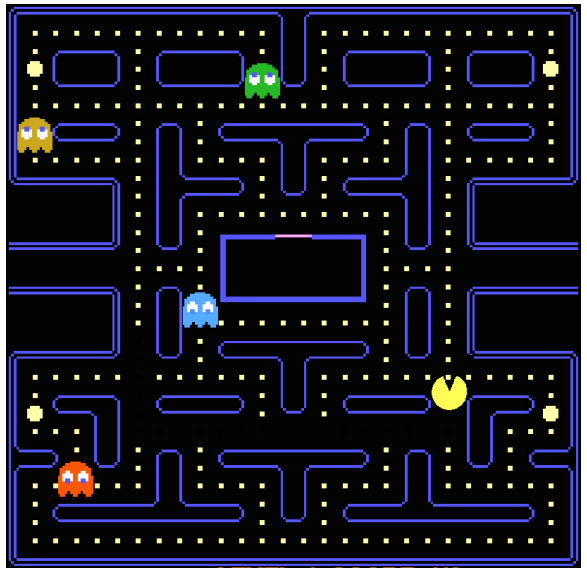
2. DESIGN THINKING FOR AN AFRICAN SOLUTION



We cannot solve the problems by using the same kind of thinking that we used when we created them.

- We need to develop the core skills for competent online learners to address the student throughput and retention.
- We do not have the space within predefined module notional study hours and shifting academic calendars to fully develop these core skills.
- Not all academics have the "*no-how*" to address these deficits.
- We need to disrupt the current student culture of "*just-in-time*" learners.
- An effective distractor must be created to attract students to develop the core skills while speaking to our own African context (challenges).

3. TOWARDS A GAMING FOR LEARNING (G4L) APPROACH



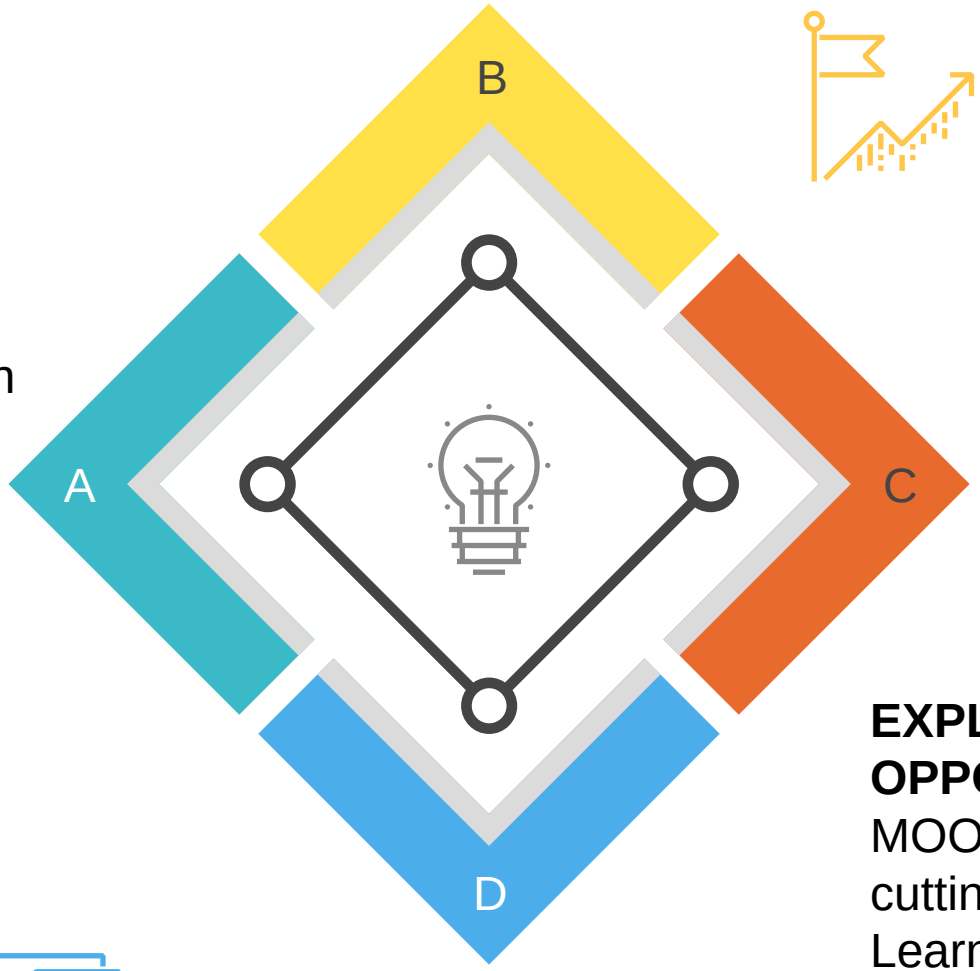
Out with the "old"

In with the "new"

- There is a growing gaming culture prevalent in our country. More young people are being exposed to gaming – challenging previous "*racial*" and "*gender*" stereotypes.
- Integration of Coding and Robotics (Basic Education) – stimulates greater passion for the gaming.
- New horizons in gaming – addressing social issues (race, gender, culture), address social mandates (violence), stimulates online collaboration and competitiveness.
- New Skills: Not just passive players, but active online players – problem solvers.
- Curriculum Integration – integrated into curriculum design to develop core 4IR skills, proponent of interdisciplinary knowledge/ subjects.

3. TOWARDS A GAMING FOR LEARNING (G4L) APPROACH

GAMING 4 LEARNING sMOOC
Current trends in Game-Based Learning and Gamification.
Pedagogies for gaming for learning design.
How to keep students engaged in gaming for learning.

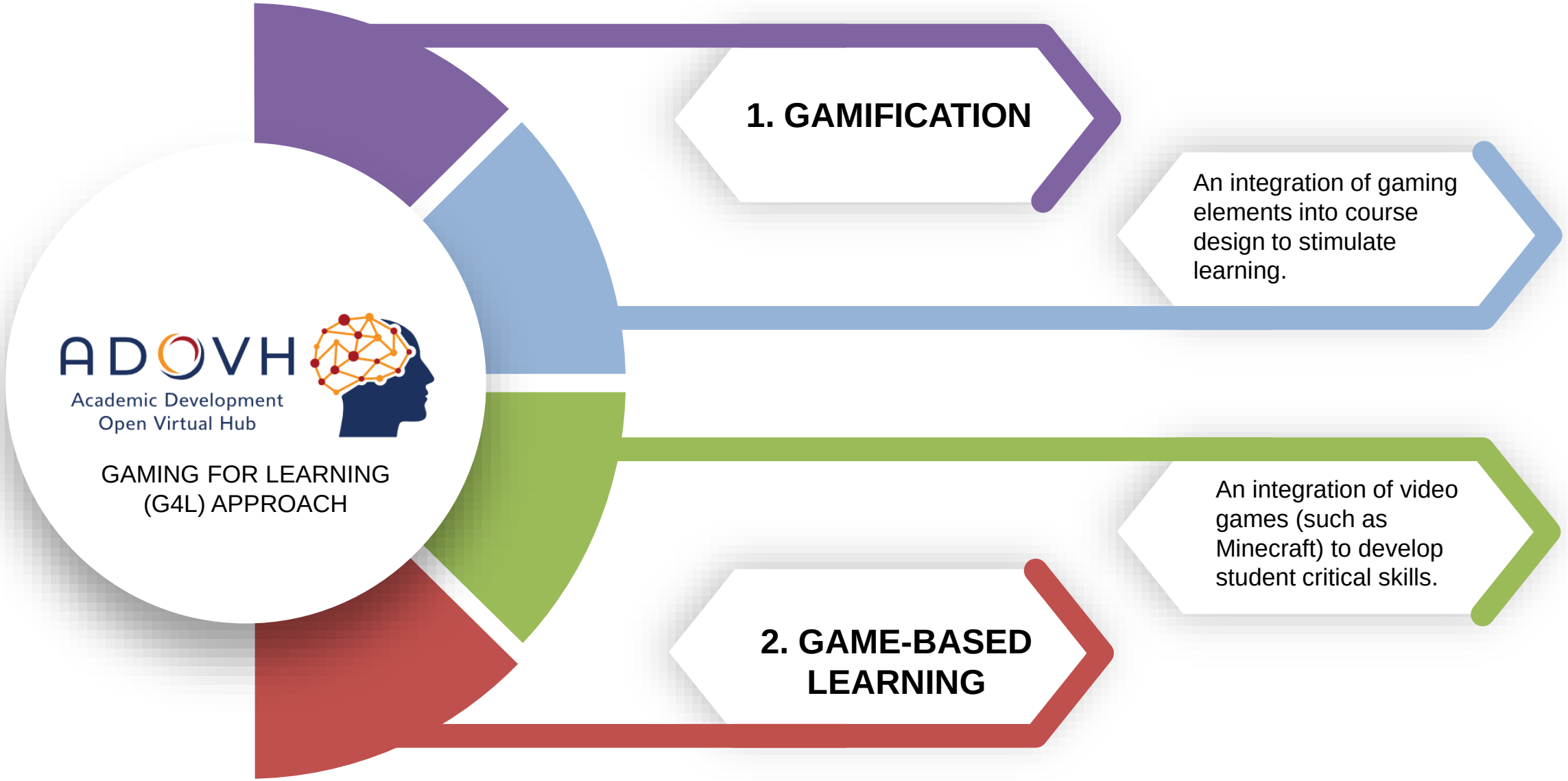


GAMING 4 LEARNING SKILLS
Skills needed to engage in the gaming for learning space as a student. Critical 4IR skills – graduate attributes and employability skills (future readiness).

COMMUNITY OF GAMERS
UNISA's diverse student profile will allow you to be part of a community of players across the country, continent and world.
Encounter new players, new mindsets.

EXPLORE NEW GAMING OPPORTUNITIES & TRENDS
MOOC that seeks to be at the cutting-edge of Gaming for Learning. Interdisciplinary knowledge and skills – transferable to studies.

3. TOWARDS A GAMING FOR LEARNING (G4L) APPROACH



4. GAMIFICATION IN E-LEARNING: DEFINITION

- ***Gamification*** applies elements associated with video games (game mechanics and game dynamics) in non-game applications. Games can be defined as “a form of play with goals and structure to develop problem solving and literacy skills. Good commercial games represent good learning principles that provide opportunities for gamers to engage actively and reflectively during game play.

Resource: Urh, M., G. Vukovic, E Jereb, and R. Pintar (2015). The Model for Introduction of Gamification into e-Learning in Higher Education. *Procedia – Social and Behavioral Sciences*, 197, pp. 388-397.

4. GAMIFICATION IN E-LEARNING: COMPONENTS

Game mechanics are the agents, objects, elements and their relationships in the game. They define the game as a rule-based system, specifying what there is, how everything behaves, and how players can interact with the game world. Well-known game mechanics elements are **points, levels, badges, achievements, virtual goods, leader boards, and virtual gifts**.

Game dynamics are the emergent behaviour that arises from game play, when the mechanics are put into use and aesthetics are the emotional response from the players to the game play. Some game dynamics elements are: rewards, status, competition, self expression, etc.

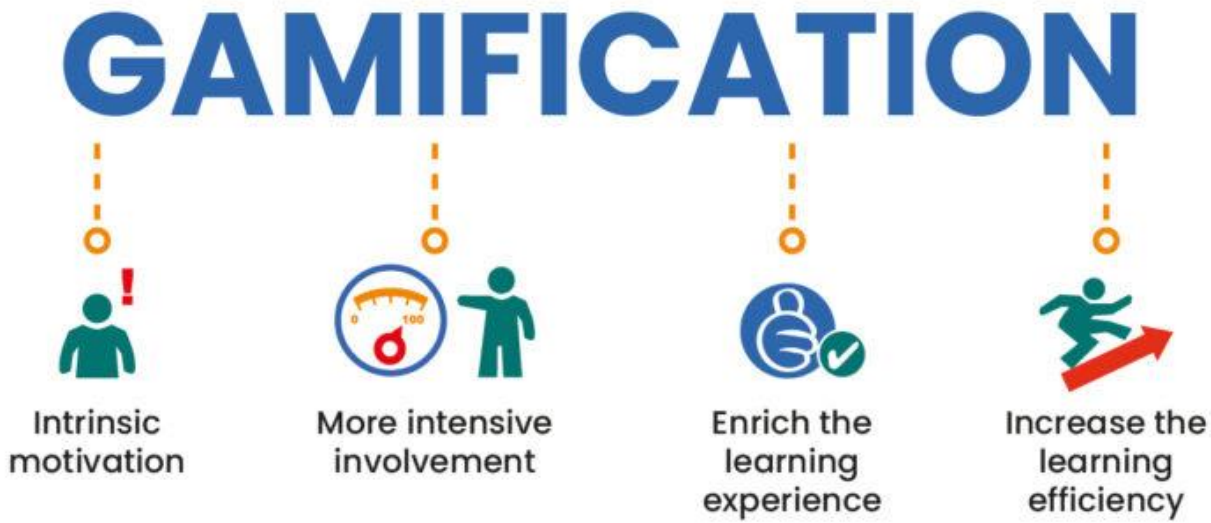
Gamification provides accelerated feedback, clear goals and challenging tasks. Gamification has some common elements with the behaviourist learning theory, like superiority of positive reinforcements, small step-by-step tasks, immediate feedback, and progressive challenges. The essence of gamification does not lie in **technology**, but the diverse learning environment and the system of decisions and rewards, all aimed at **increasing motivation** and reaching higher levels of engagement in the learning process.

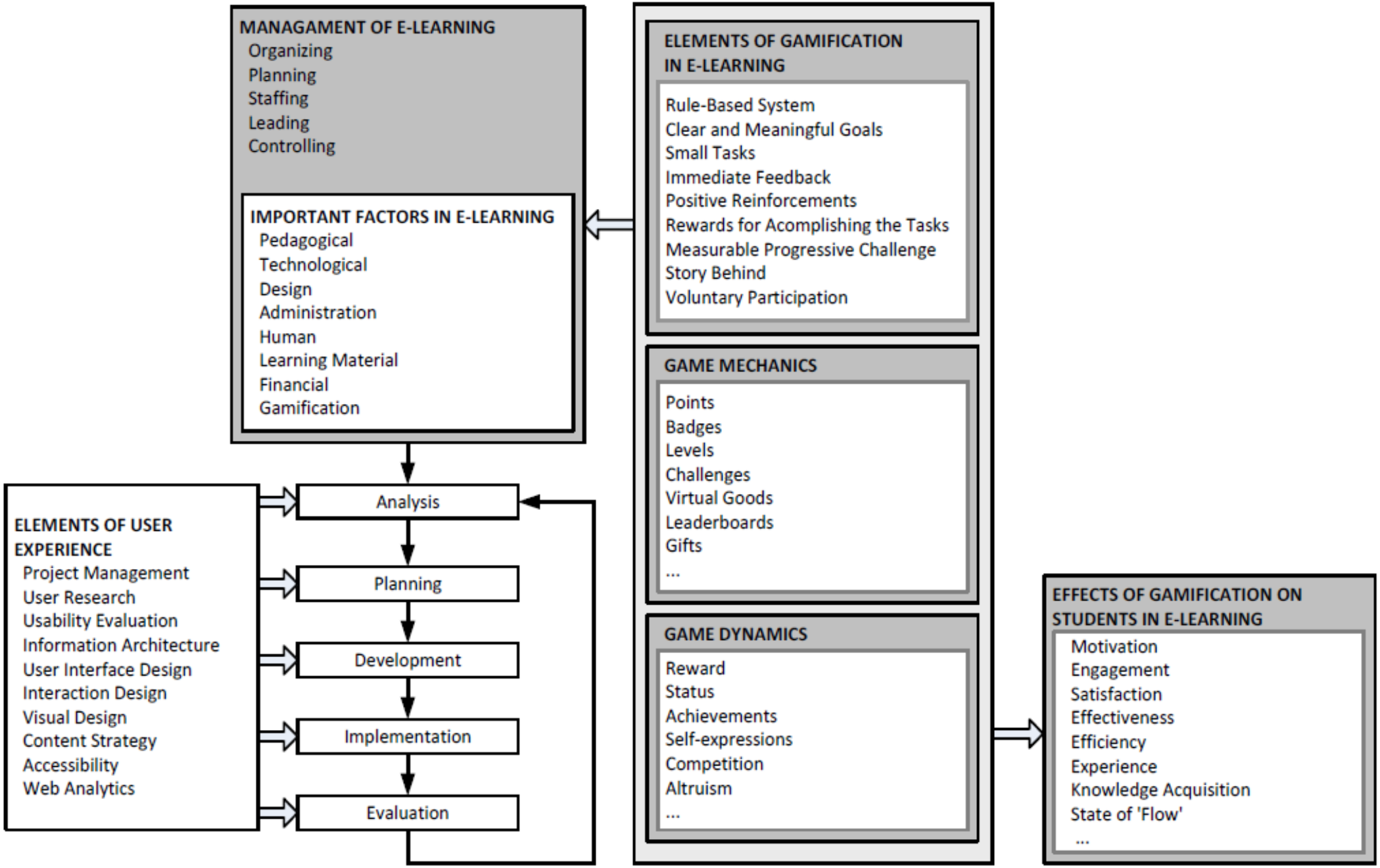
4. GAMIFICATION IN E-LEARNING: BENEFITS

- Properly developed e-learning which uses gamification can **increase satisfaction**, **engagement**, **effectiveness** and **the efficiency of students**, **motivation** and **engagement of students** in e-learning can be achieved by gamification.
- Right combination of e-learning, gamification and balanced tasks and skills can lead students into the so-called **state of flow**. Csikszentmihalyi (1990) describes the flow as an **optimal experience characterized as a state of being fully focused and engaged in an activity**. According to (McGonigal, 2011), feeling of flow is triggered by **four elements** good games have in common: **goals**, **rules**, **feedback**, and **voluntary participation**. If the difficulty of tasks is correctly balanced, it can drive the players to a flow state which is highly motivating (Csikszentmihalyi, 2008).

4. GAMIFICATION IN E-LEARNING: BENEFITS

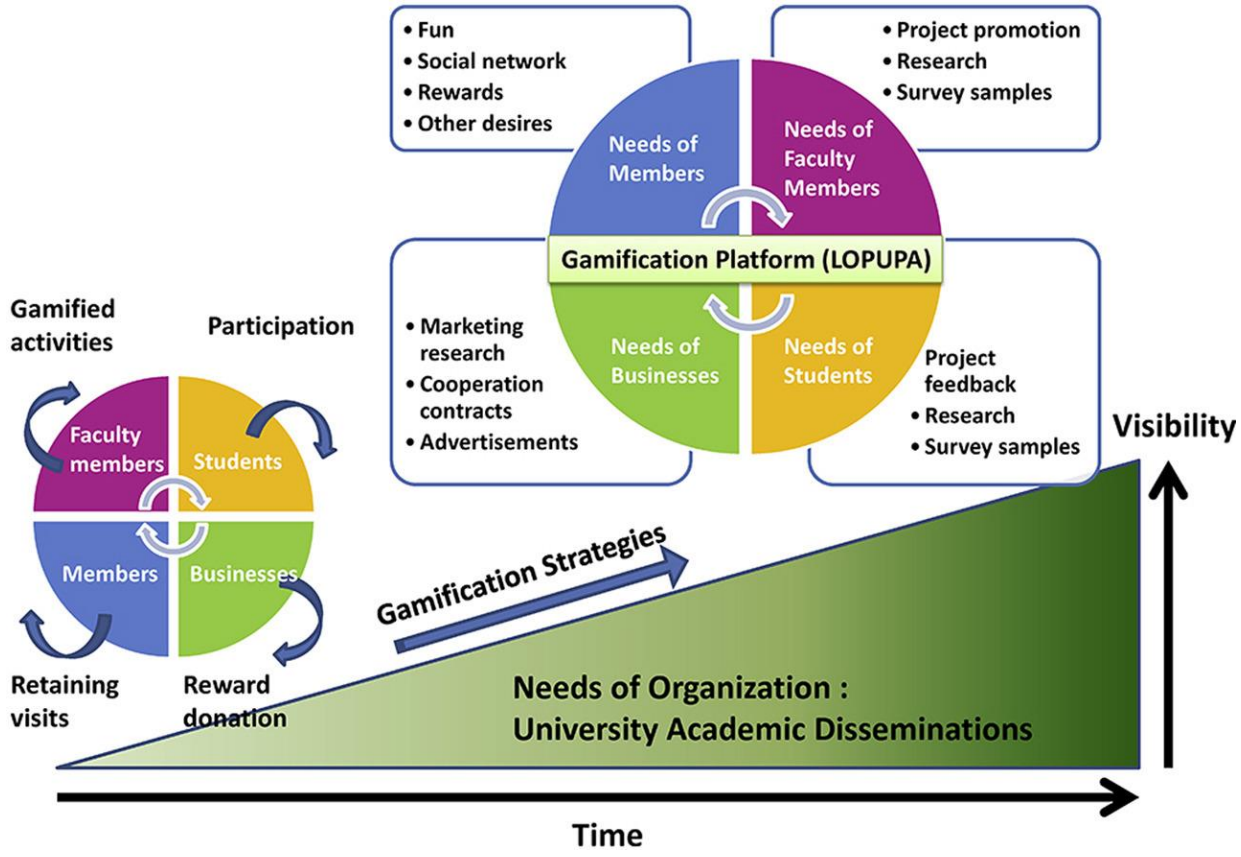
- Games typically allow players to restart or play again, making mistakes recoverable. This **freedom to fail** allows students to experiment without fear and increases student engagement.
- Well-designed educational games offer continuing opportunities for player improvement, massive amounts of feedback, tasks too complex for any one individual to solve alone, and environments that change in response to learners' actions.




MANAGAMENT OF E-LEARNING
Organizing
Planning
Staffing
Leading
Controlling
IMPORTANT FACTORS IN E-LEARNING
Pedagogical
Technological
Design
Administration
Human
Learning Material
Financial
Gamification
ELEMENTS OF GAMIFICATION IN E-LEARNING
Rule-Based System
Clear and Meaningful Goals
Small Tasks
Immediate Feedback
Positive Reinforcements
Rewards for Acomplishing the Tasks
Measurable Progressive Challenge
Story Behind
Voluntary Participation
GAME MECHANICS
Points
Badges
Levels
Challenges
Virtual Goods
Leaderboards
Gifts
...
GAME DYNAMICS
Reward
Status
Achievements
Self-expressions
Competition
Altruism
...
EFFECTS OF GAMIFICATION ON STUDENTS IN E-LEARNING
Motivation
Engagement
Satisfaction
Effectiveness
Efficiency
Experience
Knowledge Acquisition
State of 'Flow'
...
ELEMENTS OF USER EXPERIENCE
Project Management
User Research
Usability Evaluation
Information Architecture
User Interface Design
Interaction Design
Visual Design
Content Strategy
Accessibility
Web Analytics
Analysis
Planning
Development
Implementation
Evaluation

4. GAMIFICATION IN E-LEARNING: RESEARCH AGENDA

Research into the student experience of learning in higher education has focused on: student characteristics, such as the conceptions of learning with which they enter courses; course context, such as teaching methods; learning context, such as student perceptions of the quality of teaching and quantity of work; student approaches to learning, what they do and why they approach learning in particular ways; and the quality of their learning outcomes.

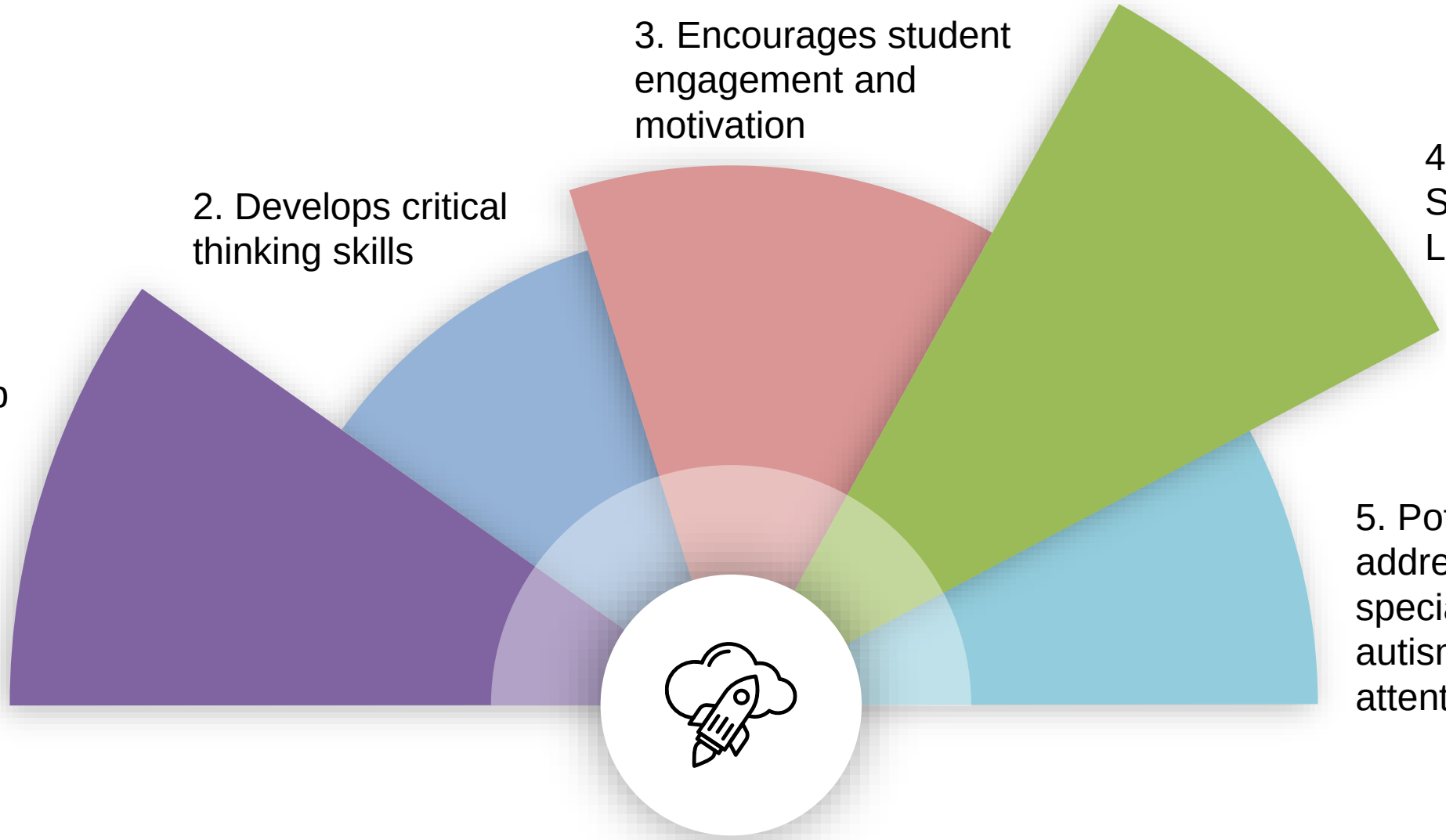


Ming-Shiou Kuo, Tsung-Yen Chuang, How gamification motivates visits and engagement for online academic dissemination – An empirical study, Computers in Human Behavior.
https://www.sciencedirect.com/science/article/abs/pii/S0747563215301011

5. GAME-BASED LEARNING: DEFINITION

- Game-Based Learning (GBL) is a teaching strategy that incorporates video games to support learning outcomes and the development of cross-cutting skills. https://www.prodigygame.com/main-en/blog/game-based-learning/

5. GAME-BASED LEARNING: BENEFITS



https://www.prodigygame.com/main-en/blog/game-based-learning/

5. GAME-BASED LEARNING: MINECRAFT FOR EDUCATION (PoC)

- UNISA ADOVH, Microsoft & RGB Gaming is hosting the first E-Tournament using Minecraft for Education.
- **Aim**: Think outside-the-box to develop digital and 4IR skills. Minecraft for Education – accessible to students at UNISA (mobile & Desktop).
- **Skills:**
  - Creativity
  - Problem-Solving
  - Digital Literacy
  - Team Focus – Online Collaborations
- **Proof of Concept)PoC):**
  - Explore how students interact with Gaming 4 Learning.
  - Develop a new culture of game-based learning.
  - Develop students' skills and coach them through the process.
  - Create a competitive learning environment.

UNISA MINECRAFT FOR EDUCATION (UM4E) E-TOURNAMENT 2022

ACADEMIC DEVELOPMENT OPEN VIRTUAL HUB (ADOVH)

MINECRAFT EDUCATION EDITION

GRAND MASTERS (TECHNOLOGY & STRATEGY)

						
GRAND MASTER 1 (TECHNOLOGY & STRATEGY): Zuan Cambell-Wilson (RBG Gaming)	**GRAND MASTER 2 (TECHNOLOGY):** Richard Wright (UNISA/ADOVH)	**GRAND MASTER 3 (TECHNOLOGY)** Riaan Henning (RBG Gaming)	**GRAND MASTER 4 (STRATEGY):** Vivian Ladner (RBG Gaming)	**GRAND MASTER 5 (STRATEGY):** Beyanca Struwig (Microsoft)	**GRAND MASTER 6 (STRATEGY):** Jaco Sauers (RBG Gaming)	**GRAND MASTER 7 (STRATEGY):** Denzil Chetty (UNISA/ADOVH)

GAME MASTERS, PLAYERS & DLA/ ICT SUPPORT TEAMS

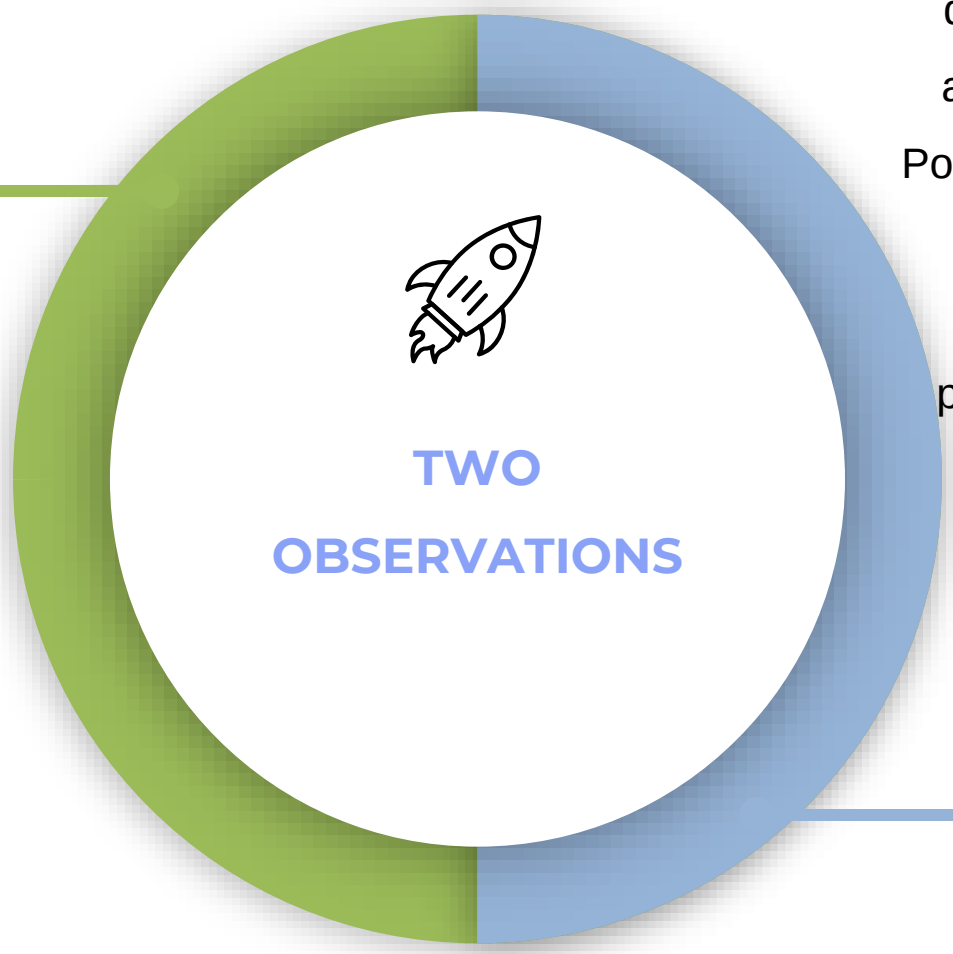
TEAM: AMANDLA (POWER)	TEAM: BHEKIZIFUNDISWA (WATCH THE EDUCATED ONES)	TEAM: CASHILE (CONCEAL)	TEAM: DELA (BECOME WHOLE)	TEAM: ETHUKA (SURPRISE)	TEAM: FUNANI (SEARCH)	TEAM: GHAKARHI (FIERCE WARRIOR)
GAME MASTERS	**GAME MASTERS**	**GAME MASTERS**	**GAME MASTERS**	**GAME MASTERS**	**GAME MASTERS**	**GAME MASTERS**
 **First Rank Leader** David Harpestad Harpesd@unisa.ac.za	 **First Rank Leader** Ramashego (Shila) Mphahalele Rmphahs@unisa.ac.za	 **First Rank Leader** Lazarus Aron Aronl@unisa.ac.za	 **First Rank Leader** Ingrid Marais Maraiie@unisa.ac.za	 **First Rank Leader** Salosh Govender govenp2@unisa.ac.za	 **First Rank Leader** Lucas Rampe Rampol@unisa.ac.za	 **First Rank Leader** Jessica Nel nelj@unisa.ac.za
 **Second Rank Leader** Lekau Rachidi Rachil@unisa.ac.za	 **Second Rank Leader** Lindiwe Mahlangu lbuthe@unisa.ac.za	 **Second Rank Leader** Vanessa Scherman scherv@unisa.ac.za	 **Second Rank Leader** Khanyisile Twabu Mawekky@unisa.ac.za	 **Second Rank Leader** Pinagase (Geoffrey) Tshepho tshepgo@unisa.ac.za	 **Second Rank Leader** Phumza Maqabe-Khuncu makoapm@unisa.ac.za	 **Second Rank Leader** Pintias Nkuna Nkunapi@unisa.ac.za
INTERNATIONAL PLAYERS	**MIDLANDS PLAYERS**	**EASTERN CAPE PLAYERS**	**NORTH-EASTERN PLAYERS**	**KWAZULU-NATAL PLAYERS**	**GAUTENG PLAYERS**	**WESTERN CAPE PLAYERS**
Assumta Chiomba 39994299@mydlp.unisa.ac.za Christiaan George Van Wyk 34814739@mydlp.unisa.ac.za Fiona Mabutsoka Shobe	Bojosi Eugene Letlhonyane 14926271@mydlp.unisa.ac.za Dali Dlophu 15830770@mydlp.unisa.ac.za Edward Jamino	Bradley Van Der Berg 67898794@mydlp.unisa.ac.za Chane Botha 69733184@mydlp.unisa.ac.za Clint Raynor Morar	Dosinoo Matsatsi Rabothata 15018288@mydlp.unisa.ac.za Johannes Sekwala Komane 15982199@mydlp.unisa.ac.za Kolotso Ayanda Mala	Bathabile Lundi Thandokuhle Masikane 59206381@mydlp.unisa.ac.za Brandon Pienaho Chataika 14815124@mydlp.unisa.ac.za	Bokang Montjane 30981329@mydlp.unisa.ac.za Delton Baloyi 67898079@mydlp.unisa.ac.za Happy Chauke	A Nolte 42015812@mydlp.unisa.ac.za Andre Marthinus Heunis 11527048@mydlp.unisa.ac.za Aphiwo Rabya 11788169@mydlp.unisa.ac.za

5. GAME-BASED LEARNING: MINECRAFT FOR EDUCATION (PoC)

- Opportunities for localizing content and challenges.
- Offers opportunities for students at different ages and skills levels (beginners – advanced)
- No advanced skills needed in gaming, are being developed within the e-tournament.
- We have 100 students representing different regions/ provinces and international students participating.

"Minecraft E-tournament is fun and exciting; I am learning a lot" – East London participant

6. CRITICAL OBSERVATIONS



Incorporation of Indigenous Knowledge (IK)

Gamification Design (GD) allows us to explore the integration of indigenous knowledge.

Decolonization

Game-Based Learning: Games often designed to promote western hegemony and prejudices reinforced (ideologically). Potential to distract students from the real-lived challenges by escape into a virtual world. How do we empower local game production – build alternative worlds with Minecraft to replicate lived-realities?

THANK YOU

Define tomorrow.

UNISA university of south africa