

High concept note



Project 21

Friedrich Ebert Stiftung (FES)

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PROJECT BACKGROUND

INTRODUCTION

Project 21 aims to create a new serious game to engage Arab digital natives - later a larger global audience - in active learning on the fundamentals of inclusive citizen representation in the 21st Century. The project is managed by Friedrich-Ebert-Stiftung (FES) and is using a participatory approach with the FES offices in 12 countries of the Middle East and North Africa (MENA) region. The objective is to create an interactive, participatory mobile and web game to promote civic literacy and engage youth to become informed, active and mindful local and global citizens. Particular care will be taken to ensure the game appeals to young women.

The project conducted a landscape assessment and organised three region-wide hackathons to gather local input which is guiding the design, genre and setting of the game. After that, several game design workshops with world renowned experts and prominent game designers from the region took place. Further input from the region is planned for the creative aspects of the game.

The learning content is being developed by a team of educational experts with special focus on the components of citizen participation, social and emotional learning, global citizenship education as well as a number of important international treaties, conventions and resolutions like UDHR, Agenda 2030, CEDAW, etc.

GOALS

The game aims to provide an opportunity for players to learn about the structure and mandatory components of a representative system, such as elections, along with key international treaties and conventions.

Participants acquire knowledge, skills and understanding of fundamental concepts of how citizen participation functions, its main components, pitfalls, challenges and rewards. The game will promote civic literacy and provide opportunities for players to become the vision holders of a new world they help to build.

STAKEHOLDERS

Educators, Civil Society organisations involved in civic education, universities, youth groups, FES and its partners and the gaming community.

TARGET GROUP

MENA Youth aged 15 to 30, in particular the disenfranchised, marginalized and disengaged.

The game is destined to be an outreach and training tool for those working involved in civil society related jobs or activities, who will act as multipliers. They include::

Local NGOs and networks
Youth groups active in FES, UN and other leadership programmes
Women's groups
Informal education providers
Gaming communities

Guidelines, limitations and pitfalls

While designing and developing the game, certain limitations have to be taken into account by all stakeholders involved.

FES Institutional Guidelines

This project is implemented by Friedrich-Ebert-Stiftung (FES - Lebanon office) and therefore must comply with the guidelines and institutional approach of digital projects in the region. This includes data privacy and security guidelines (GDPR), political neutrality as well as a "Do No Harm" policy.

In addition to these guidelines and approaches, the project is limited by time and budget constraints. Since German public funds are involved, the process must be transparent and should result in a demonstrable positive impact.

Limitations on Internet access and devices

Large parts of the region concerned by the project fall under the category of developing countries. Implementing a Serious Game and reaching out to the target group in the region offers great opportunities, but it also implies certain pitfalls. In some areas, internet access is limited and is not affordable for certain segments of the target audience. This is why the Serious Game is being designed and developed in a way that parts of it can be played offline. Updates and server communication will be achieved when the device has access to WIFI. Furthermore, the developers will have to aim at an efficient design so the game size is not too big and can be played on older devices.

Limitations of the target group and inclusive design

Parts of the target group have limited access to devices and the internet. The digital gap or divide is a general risk of digitization that all stakeholders in this project should be aware of. Furthermore, sections of the target group may have limited literacy and digital literacy skills. The game therefore should be designed and developed to be inclusive both in terms of design and content in order to reach the largest possible number of people in the target region.

Political Neutrality

The political situation in the target region is complex and is undergoing rapid change. The stakeholders in the project are aware of this fragile context and are able to respond to change in an agile manner.

It must be clearly stated that this project is strictly apolitical. Its aim is to inform and train the target audience on civic engagement, civic education and Global Citizenship Education. The stakeholders will remain politically neutral at all times. The policy of “Do No Harm” informs the project’s approach, its design and content.

USE CASE and SESSION LENGTH

Institutional Training Use

The game will be implemented as part of training activities implemented by FES, its partners and other CSOs and NGOs. Therefore, in this case, the duration of the whole game (see the chapter on “Seasons” below) will be limited to a specific timeframe, for instance 6 weeks. Within this use case, the player must play the game as part of the training activity. It will be introduced to the players by a team of trainers who will also ensure the players remain engaged while evaluating their progress. In this use case, the gaming experience is more central in the player's lives and is most likely perceived as a mixture of duty and fun. There will be a strong feeling of competition between the various camps in the game since the different players are known to each other through the training programme. The length of a normal session (motivation to interact with the game) might be around 10-15 minutes. The length of a checkup session (motivation to check on news, events and messages) might be around 5 seconds.

Free to Play Use

Outside of sessions organised specifically to play the game in the context of a youth leadership course for example, people will play the game on a voluntary basis, most probably on their way to school, university or work (busses etc.) or during their free time. Due to limited bandwidth and the expense of data packages, the game needs to be playable offline once downloaded.

The length of a normal session (motivation to interact with the game) might be around 2-5 minutes. Since a typical play session is most likely to be interrupted, the game pauses automatically in the current game state and can be continued at a later time. The length of a checkup session (motivation to check on news, events and messages) might be around 5 seconds to 1 minute.

In a typical game session of 2-5minutes the player is able to play through the main game loops at least once. This means checking the news on the macro system and playing one minigame. There is no end condition of the game.

GAME DESIGN PILLARS

- 1) ***The player should always have something to do.***
The player should regularly check on meaningful updates and news in the macro system and should be able to interact with it. After checking the macro system, the player should be encouraged to play a minigame. The Hook Model by Eyal can be applied here.
- 2) ***Be as visual as possible.***
Since most of the players do not want to read a lot of text, the game should require minimum text instructions to progress through the game loop.

3) *Feel-Good Feedback System.*

The motivation to play the game is not only to learn but more likely to provide an escape from the current situation. The game should always be a positive experience, like an oasis from real life. The player should experience quick positive feedback as soon as the app is opened.

SETTING and STORY

Year 2121:

2121: 3 races: Humans, Machines, Humanimals. Unbearable living conditions for normal humans. The Earth inhabitants are divided into three camps. Camp 1: Humans and Humanimals supporting a green Earth with a tolerant and diverse society. Camp 2: Machines supporting technological progress, collectivism and expansionism. Camp 3: Humanimals supporting accelerated evolution, elitism and agility.

The story

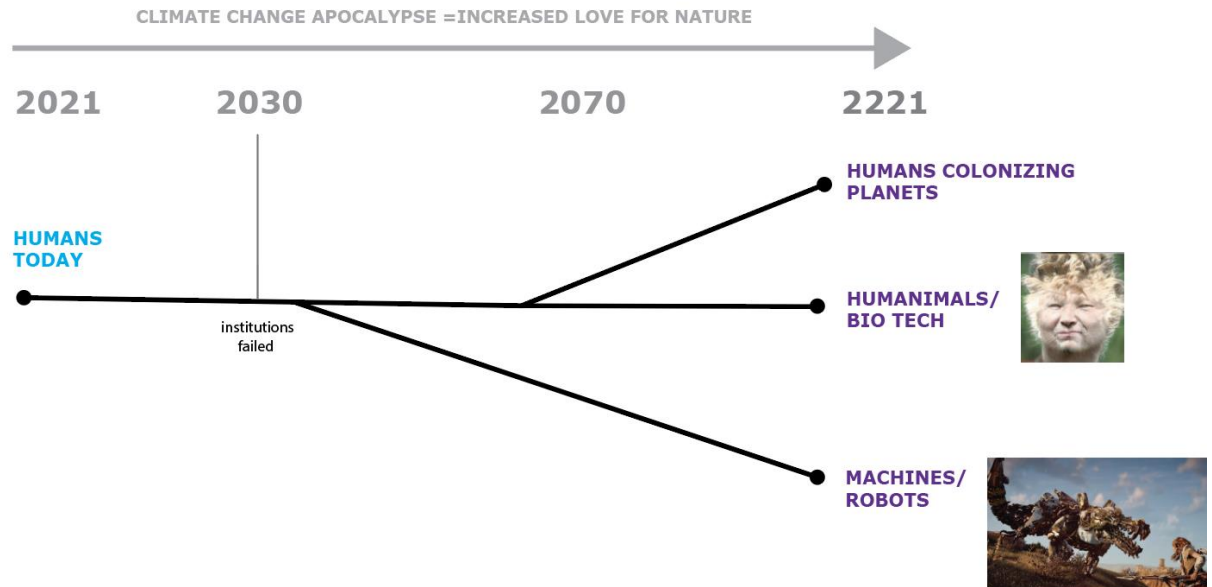
2030: A lack of common understanding on global strategy and issues as well as protectionist governance have led to irreversible damage to nature and have provoked social and economic instabilities at local, national and planetary level. The prevailing neo-nationalism of recent decades has weakened international organizations, and the role of important global players like the United Nations became seriously constrained. This led to the failure to achieve sustainable development, prevent the destruction of nature, avoid wars and ensure the protection of Human Rights.

Science, technology and innovation leaders took over, developing solutions aimed at preserving humanity in a way that became independent of political leadership.

Three branches of technological development for preserving humanity emerged:

1. Machines that can survive more severe environmental conditions, have greater intelligence and power to govern. They are based on robotics, AI, electronics, automation, etc. Human knowledge is supposed to have been transferred to these machines.
2. Humanimals: Creatures whose development is based on genetic engineering/Synthetic biology. They are shaped by taking the best out of human beings, animals and improving on both: they are intelligent like humans, physically strong like animals, and more adaptable like future creatures (for example, they can grow fur faster for cold, take it off for heat and keep water for longer like camels).

- Human beings inhabiting another planet (Mars, Venus, Moon) and/or eventually terraforming it.



Stories relating how these creatures came about, their development and the innovations that led to them could be embedded into the game such as a genetic engineering scientist who turned himself into a bearman or an AI/robotics scientist who was killed by his own creation.

By 2121 - there is no dominant design, and the three types of creatures are still there, although they have evolved a great deal:

Most of the people on Earth have died because of unbearable conditions, wars and catastrophes. They were also killed by the new creatures. There are a few bases on other planets, but life there is difficult, and the communities are still small. Terraforming has not yet started.

The machines/robots, the Humanimals and people are vying for dominance.

Most Humanimals take the side of humans, but many evolutionists among them believe that humans are obsolete and should go. Machines are the enemies of both, due to their different needs (more in the next section).

The 3 species

1. Issues and actors

Actors

Humans: Same as 100 years earlier, not evolved, conservative, preserve the story of humankind except that they have moved to a more plant-based diet (more on that later).

Humanimals: Feel like the natural continuation of humanity. As strong as animals, as intelligent as humans, future-proof by being able to adapt quicker to the environment. They have strong emotional intelligence and can experience empathy, etc. They can communicate like humans, but also in their own way (like animals). They consume plants. They come in different physical shapes and look like bears, leopards, etc. Some scientists are working on "resurrecting" extinct animals such as the dodo, elephant bird, Tasmanian tiger and even dinosaurs.

Governance and decision making are still complex (although more evolved than with humans). Governance still makes use of large amounts of data and knowledge-based decision making. But as was the case with humans, governance involves a lot of bias and noise (Kahneman and Tversky). The Humanimals also have some sort of swarm intelligence, derived from their animal instinct.

Machines: Mechanical robots. Super intelligent. Able to process vast amounts of information. Environmentally independent (can survive almost any condition). Communicate with humans in natural language (know every possible language) but communicate with each other through data transfer ('invisible' instant messaging). Physically, they can take different shapes: think of Boston dynamics (<https://www.youtube.com/watch?v=fn3KWM1kuAw>) meets transformers :)

They are not known for possessing much EQ, let alone empathy... The machines are very disciplined and organized. Governance is quite easy thanks to their logical decision making processes that are also based on large amounts of data (not always good though - again Kahneman and Tversky).

Issues

The Earth is taking a different direction and shape. The various actors are looking for different kinds of resources, and that is going to shape the way the planet is going to look. None of the powerful actors have achieved a dominant design that would allow them to take over the planet and impose their view of how it should develop.

2. Arenas and interests

Interests

Humans: Need a natural environment to thrive. Consume plants. Want to preserve human beings on Earth, as well as to live together in peace with others. They take pride in being the fathers of both Humanimals and machines and believe that others should respect them for this reason (some even believe that they should be given special treatment as Earth 'veterans'). They side more with the Humanimals, and want to take control of the machines/robots (instead of killing them completely which is what the Humanimals want). There are just a few humans left and they inhabit a mountain in Eurasia (we can probably define it) where nature is more preserved and the temperature more moderate. Some humans might still exist in other parts of the world, but they are hiding from the robots (they might rejoin the safe spot).

Humanimals: Need a natural environment to thrive. Consume plants, including a very important protein-based plant (Name TBC). They want to preserve nature and have enough land to grow plants (including the super important protein-based one). While they are programmed to satisfy their protein needs with this plant, if they do not get a sufficient amount of it, their natural predator instinct rises up and they begin attacking other living beings (weaker humanimals and humans). They are divided into two tribes. The first sides with humans and feels they should work together, as they share common interests and are naturally related. The second is more elitist, believing that they are more evolved than humans, and humans should be replaced by them soon. Those who come from resurrected animals that became extinct because of human activity are more likely to take the side of the former. The two tribes/factions can often fight but they can also collaborate when threatened by the machines/robots. Both factions believe Humanimals are to become the master race on Earth, as they combine the best of humans and animals. They live in the cooler parts of the planet - Europe, North America and North Asia. They are keen on invading more territories and conquering them from the robots and 'reterraforming' them...

Machines/robots: Feel superior and believe they are the most intelligent and for that reason, they believe they should dominate. They rely on a lot of minerals and energy. Energy comes from the sun, and they have covered an important part of the invaded areas with solar plants. The robots have occupied most of the hot parts of the world - Africa, South Asia, South America and Australia. They have also built mines and exploited minerals like lithium and ore for the production of more robots or self-regeneration.

Arenas

The inhabitants of Earth are divided in three camps and compete for dominance. The arenas where they meet are direct (in the micro games) and indirect (in the macro game).

3. Assets and information

Assets

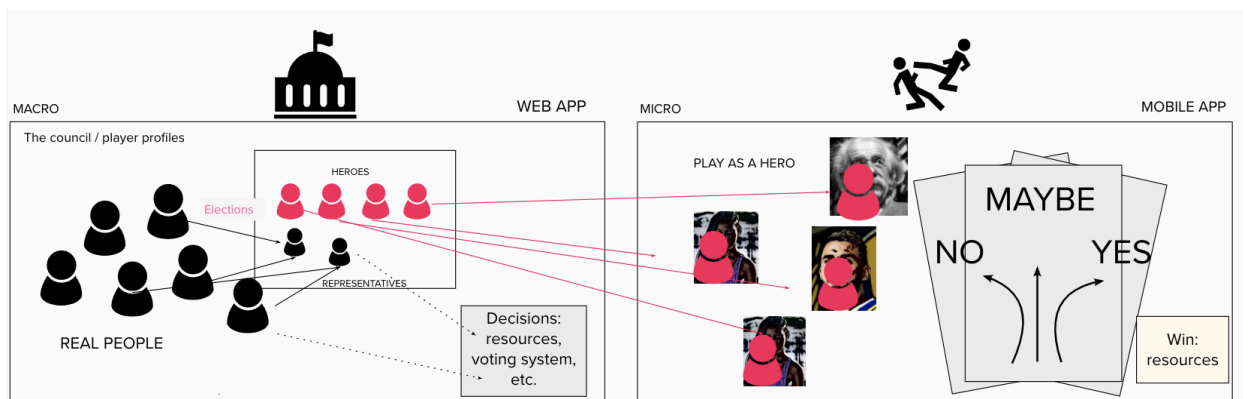
Humans: Electromagnetic weapons. Understanding of Earth and its past. They have a strong relationship to art and culture, society (even gossip, etc.), and keen awareness of history. (Yuval Noah Harray's style).

Humanimals: Electromagnetic weapons. Better adaptability than humans. A balanced combination between collectivism and individualism. Strong participatory methods in decision making.

Machines: Strong collectivism. Fast decision making. More authoritarian based on the presumption that the one with the most data and processing power should take the decision. Bio weapons.

GENRE

The game is based on two main interlinked systems - a macro and a micro system. In the macro system, players engage with others and affect events in the "big picture" while in the micro system, they are able to engage as single or multiplayer (synchronously) in the form of small games/challenges that are designed to be played in a few minutes or a dozen minutes.



The different species and camps

In the first phase of the implementation, the player can choose between different species and join a camp.

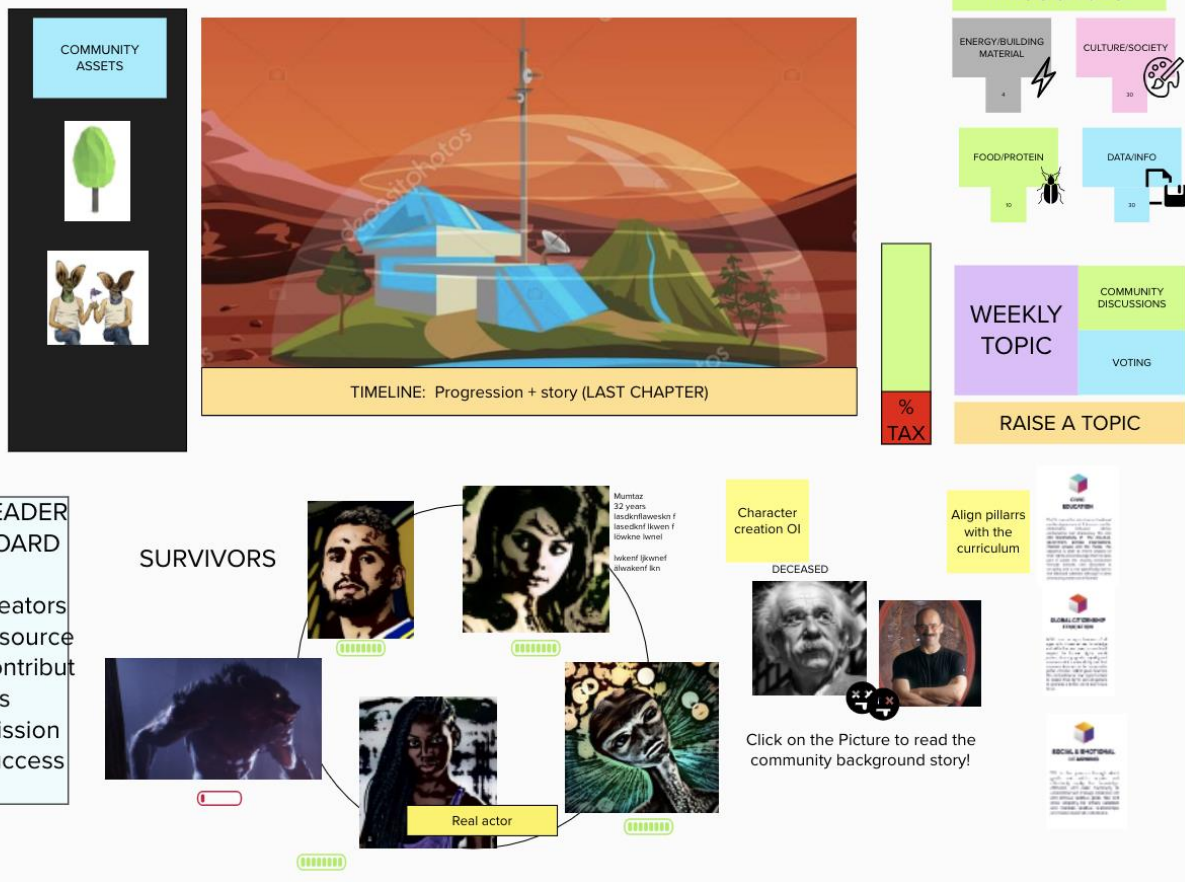
1. Camp 1 (name TBD):

- a. Inhabitants: Humans and Humanimals supporting green Earth with a tolerant and diverse society
 - b. Core values and ideology: environmentalism and the belief that nature, humans, animals and Humanimals are one thing, tolerance, diversity, conservatism, individualism
- 2. Camp 2 (name TBD):**
- a. Inhabitants: machines
 - b. Core values and ideology: technological progress, collectivism, practicisim, knowledge development and acquisition, expansionism (including universe expansionism: the belief that terrans should expand their their civilization to other planets through technological progress and dominate in space in order to prevent being destroyed by aliens)
- 3. Camp 3 (name TBD):**
- a. Inhabitants: Humanimals
 - b. Core values and ideology: evolutionism and the belief that evolution should be accelerated through scientific breakthroughs, which allows for faster adaptation; elitism, self-improvement and perfectionism

The Macro System

The Macro follows a community-based approach, in a game where all players decide on the future of their camp. Players must decide and vote on how the camp should resist and grow - meaning creating or unlocking new buildings and areas, boosting characters (Heroes/Champions), and responding to story events. Participation in the decisions is based on creation, deliberation and direct/indirect voting. The player will even be able to make a decision on the community's governance structure, including the voting system for decision making. They can also delegate the decision making for some elements by electing representatives or directly through a popular vote. Each week, a new event will trigger the story and decisions made by the community will reveal their consequences. In this manner, players will understand the implications of different governance structures and voting systems. As a reference, the community game approach will be similar to the game "Blaseball" and the base building approach similar to games such as "Zombies Run" an "Eco".

The micro system will feed the macro system. Depending on the outcomes in the micro level, players will gather resources needed in the macro. The player plays as himself/herself in the macro system, while in the micro, they will be playing as a hero avatar.



The resources are:

- 1. Material resources: Energy/building materials/Food
- 2. Culture/ Society: ethics, history
- 3. Data: DNA/information

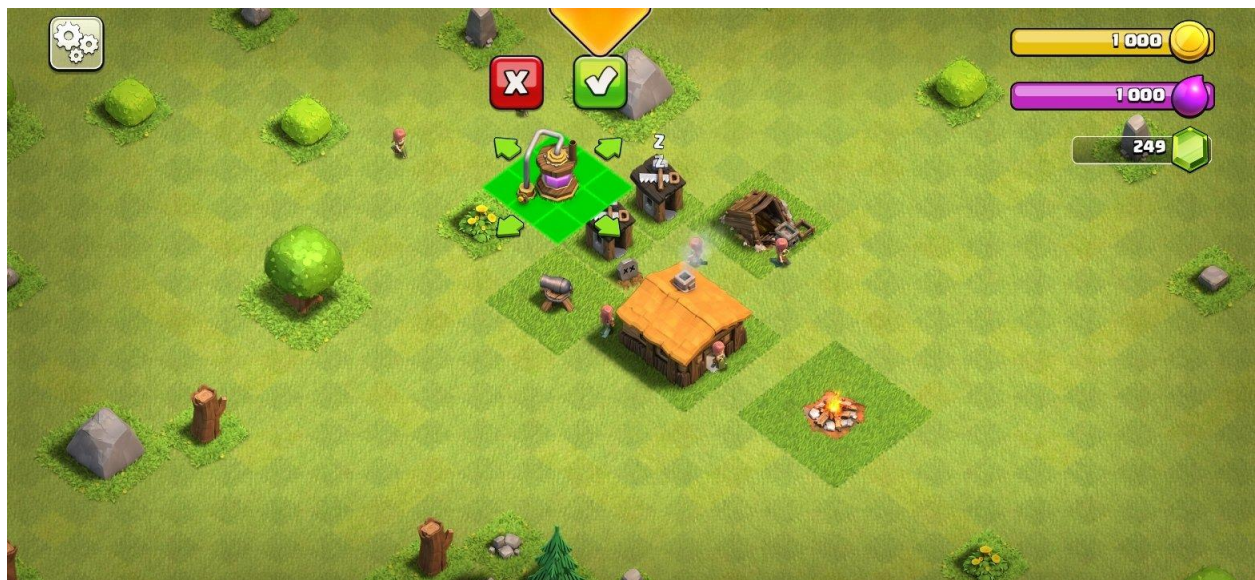
There will be periodic weekly voting periods when players can decide how to progress in the macro system as a community.

Macro System Objectives

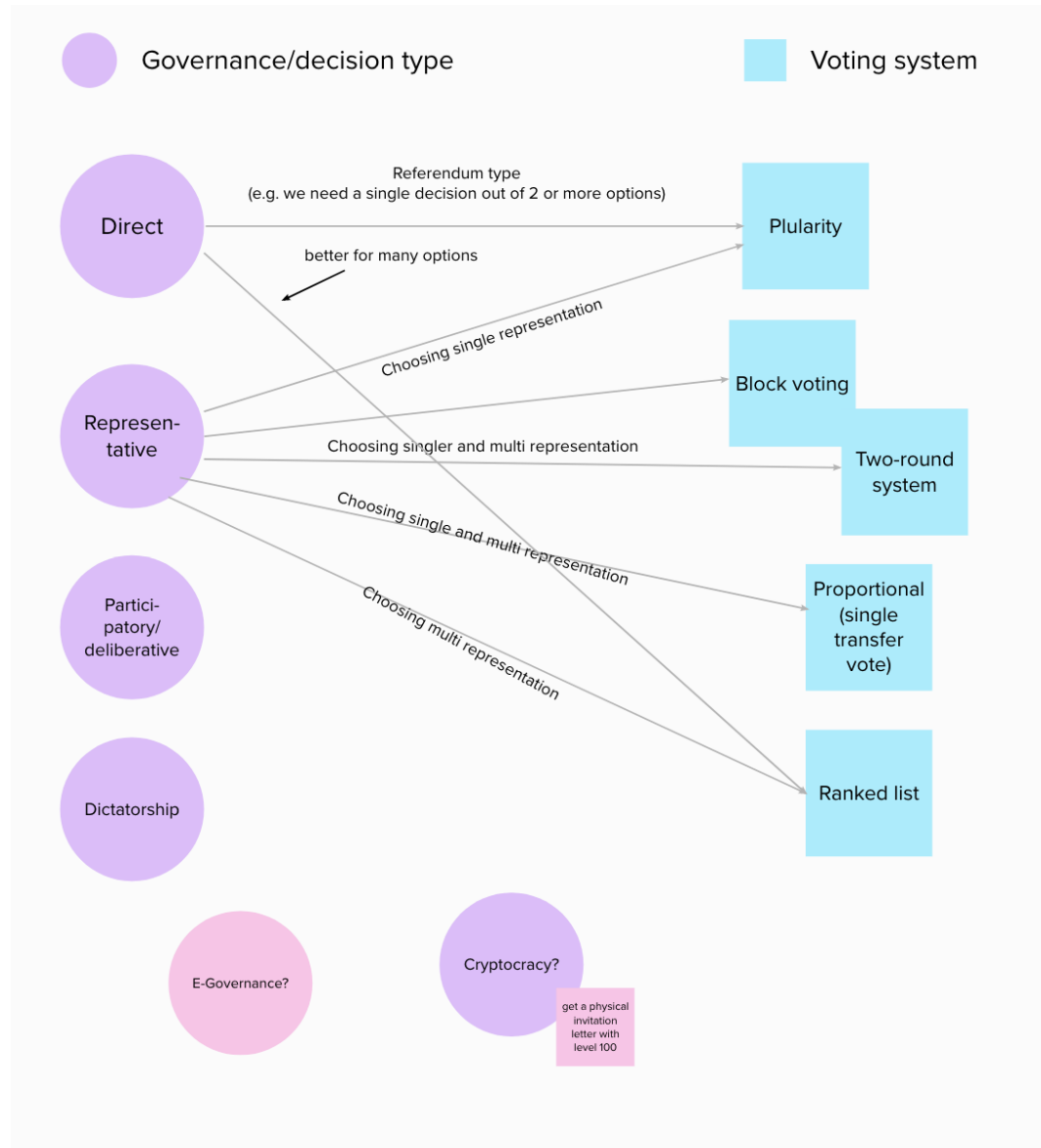
In the macro system, different tasks could pop up that need to be handled by the community. It can be building new things, resolving problems etc. This will be decided via the voting system by the community (as a reference, check out the overview map by “Zelda - Hyrule Warriors” below for a possible UI and mechanics).



An alternative could be a more dynamic UI inspired by “Clash of Clans”.



Voting Systems and government types:



Macro system overall goal:

Increase the camp, enrich it with new assets together.

Leaderboards in the Macro:

- Successful missions (by player and by team) - Those who have won most missions and resources as a whole
- Top contributors (by player) - Those who have contributed the most resources to the community
- Top creators (by team) - Those who have created the most successful assets

Weekly VOTE for the next upgrade:

3 out of 1000

Voting System for next week?

5 of each

10

30

100

10

New Game Mechanic: Redraw a Character

Elisa: Dont allow voting for mechanics

Health Boost: +2

Survivor Camp Upgrade: Radio Station (enables podcasts by players)

Resurrect:

Character Boost: +1

Community Event incoming!

NEW SURVIVORS INCOMING! Create a NEW SURVIVOR including background story and picture and submit it to the macro system! The best 3 will be taken into the survivor pool!

UPLOAD SURVIVOR

This weeks top scorer!

This weeks top Community Supporter!

1. Philippa	144
2. Nassim	140
3. Yane	138
4. Elisa	132
5. Philipp	99

Community Event incoming!

NEW CHALLENGES! Create a NEW CHALLENGE CARD and submit it to the macro system!

MORE about Project 21 and Civic Education

The Micro System

The Micro system provides the players with the possibility to play three (for now) mini games. The player will join each mini game as an avatar selected from the heroes available at the Macro level in their camp.

Each of the three games will contribute resources to the user who is playing, as well as to the camp as a whole. The percentage of acquired resources that go back to the community depends on the tax rate voted at some point in the Macro level. Apart from the mandatory percentage of resources to be taken away, the player can add extra resources to the community (such an action will increase the user's rank in the contributor's leaderboard, but will be less on the successful mission leaderboard).

The three resources generated from the minigames are:

- Data
- Food/Material
- Culture

The three minigames as part of the Micro are:

1. Crack the spy (party multiplayer, resource: culture)

Multiplayer

The game follows a synchronous multiplier (3-6) approach where each player chooses an avatar from the survivors and plays with cards.

Each mission presents a confrontation between the heroes and a spy from another camp. This could be anything like a flying robot/machine trying to spy on the camp of the human/humanimals. The main goal of the mission is to dismantle the robot, rather than killing/destroying it (in order to avoid violent elements in the game). The dismantling, instead of physical/hardware, can take the form of a hacking/cracking of the robot. This would mean, gaining access to the software, and eventually the data that the robot possesses.

It links to the story in the following way:

We know from the story that machines/robots were developed as very intelligent with a high IQ. EQ has been abandoned since it makes them less efficient. They possess large amounts of data, making them operate efficiently. However, this data has never been related to emotions of any kind, so one way to crack/hack the robot would be to create emotional relations to the information it possesses. This will confuse the robot's abstract-logical functioning and will make it more likely for it to reveal information to the heroes, make decisions that benefit them and even lead it to side with them.

The cracking will occur in the following way:

During the meeting with the robot, the heroes gain access to some preliminary data (pictures of some of the robot's past experiences) and start connecting those to emotions. It is like training a machine learning model based on emotions which the robot is lacking to eventually make it make it 'surrender' to the heroes. And we follow the same approach - either the players are presented with very little information, or each one sees a different part of the story (visual/picture narrative).

In the end there could be a discrete variable of the success of the robot's "emotionalization" ... for example how close did you manage to make his/her EQ to that of the average human being? (cf. ML learning accuracy). Of course, the earlier the player manages to identify the infiltrated robot in the team, the greater the accuracy he/she can obtain. It could also be sequential as in the game "Reigns" - with each new picture (or a set of pictures): if the player does not manage to "emotionalize" the robot sufficiently, then the mission finishes with the score the player has achieved and he/she does not get to continue to the next one. In the process the heroes can

possibly keep different skills - for example, one has slightly more time to react, because it has better empathy, the other sees more of the image, because it is more intelligent etc.

A nice approach would be to have three skills for the heroes: IQ, empathy (or EQ) and strength (higher for humanimals normally) that will adapt automatically (as discrete variables) to the mission attributes for each player, eg: time to react to the visual information (higher for higher EQ), amount of information available (higher for higher IQ), the likelihood of being the possessed hero (lower for higher strength).

More about the possessed player below:

Infiltrated/possessed hero/player: One of the players is a traitor, an infiltrated robot. The player who is possessed will not be able to select the answers to the pictures him/herself and would have to defend his/her actions during the dialogue. If the rest catch the possessed player, he/she loses. If nobody catches him/her, he/she wins extra resources. The earlier the group finds the traitor, the better, as that will take the accuracy of the emotional training to a higher level.

UI/UX: for reference, the Micro game will have game mechanics similar to Dixit or Chuka (TBC), with a UI close to that of Reigns.

Content creation and data for the "Crack the spy" game: The images will be created by the community of creators, and they can be tagged by them. Alternatively, the images and the tagging can be done by the opposite camp, and the players would have to match their reactions in an attempt to build empathy.

Hero 4 View

Hero 3 View

Hero 1 View

Hero 2 View

Chinese Change
Miguel - Chinese

Alternative: they all have one vote for the whole picture, but always see only their parts and try to communicate to find out the whole message

Come to a conclusion: How should you feel?
(Traitor gets their vote automatically)

At the end of each round: Do we know the traitor? Evaluate the decisions of the others and vote

At the end (after 5-10 rounds):
You have managed to train the spy with emotional intelligence with 72% accuracy

Singleplayer


The game should also be playable offline as a singleplayer. Of course, the game rules need to change but the assets and UX will remain the same as much as possible. The player sees each part of a picture (see above) one by one and has 5 seconds to select an appropriate emotion. If the counter hits zero, the game chooses a random emotion. After each decision by the player, the game reveals the reaction that was selected most often by the community. If this emotion is aligned with the emotion that the player chose, the player gains one point. If the player made the wrong choice, he/she gets -1 point. After all 4 parts of the picture were executed in this way, the big picture will be revealed with the same mechanic, but this time the right answer is worth 3 points. At the end of the game, the player cannot have negative points (will be set to zero). There is a winning streak function. Each time the player selects the correct choice consecutively, he/she will get **X+1** additional point per stage (ex: 2 right answer in a row = (1+1+1) 3 points; 4 right

answers in a row = $(1+1+1+1+2+1+3) = 10$ points). The game will store the decisions made by the player and will update the database with these decisions once he/she is back online (WIFI).

2. Word quiz (single player, resource: data)

There will be daily/weekly challenges where players will be able to solve word quizzes on topics related to civic education.

LETS MINE YOUR BRAIN POWER TO IMPROVE OUR SOCIETY!



could be even a quiz duel...

daily challenges / weekly winning streak

What is Good Governance?

ANSWER A	ANSWER B
ANSWER C	ANSWER D

NICE!
+ 5
RESOURCE
POINTS!

+ Ressource DATA

3. Infinite run (single player, resource: food/materials)

The player will take the role of one of the heroes from their camp and will be sent back in time on a mission to explore the past and maybe even influence it. Through a “time machine” (another camp building), the hero will run along a timeline. On the way, he/she would have to escape certain dangers (soldiers from the other camps, catastrophic historical events, etc). There will be stages at which the player will be allowed to experiment with changing a certain past event and see what the consequences could have been. Some difficult dilemmas might be phased. The changes to the track of the history will not apply to the macro system and the community. However, if a critical number of players from a camp (let’s say 70%) reaches a certain event in history and changes it in a consensual direction, a small change could be applied in the macro (for example, reverting the result of an election). The events foreseen will be related to different governance, social, climate, etc. issues.

In terms of UI, the runner will see the track as a timeline, while the scenery changes every 30-120 seconds to be consistent with the age/year that the player has reached.



4. SDG Game

The SDG game could be a clone of the SEL game using the same mechanics and same visual assets. However, instead of evaluating on an appropriate emotion, the player must identify which SDG most players have found as fitting for the current picture. Example: The player sees a picture of a refugee camp. Now he/she needs to decide if it fits SDG 1, 2, 10 or 14. The player decides on the SDG and gets the solution. 55% of the community chose SDG 2, 20% chose SDG 1, 15% chose SDG 10 and 10% chose SDG 14. The player chooses like the majority, he/she gains points. Later, when the player is back online (on WIFI), the data is transferred to the server which updates the percentages.

Seasonal System and Ongoing Game Design

The game is organized in seasons similar to a TV series. The launch of the game will kick off season 1. Each season consists of 3 acts. Act 1 introduces the players to the current state of the story and allows them to become familiar with the functionalities. Act 2 is the longest period of season 1, and the core game will take place here. Players will play games in the micro system to collect points, and will vote and interact with the community in the macro system. In Act 3, it will be decided which camp will win this season. Players will collect points for the camps in act 1 and 2 as well, however there might be a point boost in act 3 to increase the urgency and activity. At the end of Act 3, the points of the global leaderboard of all camps will be counted to announce the winner of season 1. The game designers and developers will then react to the outcomes of season 1 and create a story bridge that brings the players from season 1 into season 2. In season 2, there might be updates on the art, story, new functionalities etc. However, new players should always be able to join in, not only in a new season.

The game will be implemented by FES both in a “Free to play” mode and as part of institutional training on private servers. A season in the “Free to play” mode might have a duration of 2-3 months (still needs to be discussed), whereas in an institutional training context, a season might have a duration of 3 weeks in real life.

Depending on the funding and duration of the project, the game is ongoing and might have a large number of seasons (for instance 12 seasons over 3 years of project duration).

One major hook for the players is to keep them engaged through curiosity and a participatory approach. They should be empowered as a community to change the story of the heroes, their camp, their species (if there are several camps of one species) and the story of the overall gameworld. Furthermore, the game should respond to their ideas and suggestions and implement new features and functionalities that improve the immersive approach of a world that can be directed and evolved by the community. New species might come up, new minigames in the micro, new ways of interacting with other camps etc.

UI, UX and Controls

The controls are very easy and user friendly. Players should not need to be able to read in order to play and navigate.

The game is played in portrait mode, mostly using one thumb to use the controls. Using sliders and dials as input elements is preferred to number pads or text boxes. Generally every information is highlighted in an “easy to understand” system, giving context to actions required.

The game must focus strongly on high quality UI, UX and Usability. The game itself with all its functionalities is complex, therefore the player should understand the basic navigation and get an overview intuitively by making use of conventions and a good feedback system in terms of user-system-interaction. The landing page of the game should include the macro and the micro system. Depending on the camp the player chooses, the UI should appear differently, UX could be the same. A first Mockup for the species of the machines (draft that can be changed) can be seen in the following diagram:

Home - Information about the project



Binarcity - Camp of the Machines



Algorithm Improvement (Vote)

System Exchange (Forum)

Minigame - Spy Humans (Runner)

Minigame - Processing History (SDG)

Earn Data:



Profile and individual resources

Entrance to Macro System & Learning Content

Team Resources

Create new content

Minigame - System Optimization (Quiz)

Minigame - Understanding Humans (SEL)

Game content creation

The initial part of the game content (including the assets) will mostly be created by the game development vendor along with the Project 21 Core team.

However, with a phased approach, the content will progressively be enriched with the active involvement of the creative part of the game community. Through various open innovation and creativity models, the community will contribute content and assets to be used in the upcoming seasons.

These assets and content include:

- Concept characters for new heroes for each of the races. This includes the background story of each character, as well as their visual appearance
- Storyline for new seasons
- Camps' new buildings. This includes the function and story of each building, as well as their visual appearance
- Assets for the mini games (For example, images for the "hack the spy" game)
- Background music and sounds

The model of involvement is to be defined on collaborative and/or competitive bases. More below:

	Collaborative	Competitive
Motivation	Intrinsic: Contributors are part of the community and have buy-in through enriching the content	Intrinsic and Extrinsic: The contributor earns points, money or reputation
Governance	Mostly community-driven: The need comes most of the time from the community	Mostly rules-based: The moderators identify the rules, setting the competition and defining the rewards
Examples	1. Users from one camp create a story and illustrations to challenge the users from the other camp in the "crack the spy" game	1. An organization starts a competition and rewards the users with a prize (cash? Or other forms of support) 2. The contributor earns special points in the game itself when the assets created by them win the competition (there can also be a special leaderboard for that) 3. Non-contributing users provide donations to contributors in a competitive manner. Alternatively: NFT

LEARNING MESSAGES

The game's learning content is based on a broad curriculum that includes the basics of civic education, citizenship engagement and Global Citizenship Education. It incorporates elements of Social and Emotional Learning and is based on international treaties and agreements.

The different learning strands will be both mainstreamed through the various game mechanics and game content and assets, as well as extra curricular content and activities.

Measurement of how effective the learning has been will be built into the game (Please see the Impact Measurement Section below).

The learning content of the game is organized in three main strands:

Strand 1: Dignity, Equality and Sustainable Development (foundational)

Strand elements:

- Human dignity
- Equality and diversity (including identity and belonging, discrimination, prejudice and stereotyping, inequality)
- Sustainable development and the Sustainable Development

Goals

Strand 2: Governance

Strand elements:

- Decision-making
- Leadership
- Governance structures and processes
- Voice and voting
- Role of the media

Strand 3: Citizenship in Action

Strand elements

- Learning from others
- Exploring my interests and concerns
- Analysing the challenge/issue I care about (digging deeper)
- Teamwork
- Action planning
- Taking action

- Reflecting on and showcasing of action

Impact Measurement System (IMS)

The overall impact of a Serious Game is difficult to measure. It is a complex mixture of direct and indirect impact on individuals, groups and even societies. Direct learning is blended with awareness raising and trigger points for behaviour change. To measure the impact of the game as effectively as possible, different functionalities and systems should be used for this project:

a) Data from the stores

A lot of data is already collected by the stores while accepting the terms and conditions. Data that should be analyzed by the project includes:

- Download numbers
- Country of user (via IP address)
- Number of active installations
- Average duration of active installation
- ...

b) Firebase Realtime Database

This realtime database stores and syncs data on a cloud. It can collect a variety of data even offline. "Firebase apps remain responsive even when offline because the Firebase Realtime Database SDK persists your data to disk. Once connectivity is reestablished, the client device receives any changes it missed, synchronizing it with the current server state" (Firebase Website). Of course the user must agree in the terms and conditions that the data is used. Data that should be analyzed by the project includes:

- Friend invitations by users
- Overall playtime and average session time
- All kind of votes that were made in the game
- Average Level of all players
- Drop Out Rate
- Average Time till Drop Out
- ...

c) Questionnaires / Longitudinal Design

Questionnaires deliver quantitative data from the users. The user should be rewarded at the end of the questionnaire (for instance: +300 Ressources and a Badge), but the user should not know about the reward beforehand. Unexpected rewards lead to a higher dopamine level. Furthermore, the bias of the questionnaire is reduced.

Pre Questionnaire, Post Questionnaire, Longitudinal Questionnaire

The player should have a button to enter the pre questionnaire with a countdown (60 minutes of playtime) to create a sense of urgency and to ensure that the player completes the questionnaire at the beginning of the game. After reaching a certain level in the game, the user should see a

new button with the Post Questionnaire. 3 months after finalizing the post questionnaire, the user can access the longitudinal questionnaire. The questionnaires can be supported by Push-Notifications from the game and even Emails (if the user is willing to give their email address). The form of implementation is decisive for the questionnaire setup. In an institutional training implementation, the pre, post and longitudinal questionnaire can take place. In the “Free to Play” implementation mode, a pre questionnaire can be followed by frequent monthly questionnaires.

For a good evaluation of the answers, a Likert Scale can be used. This scale can be also realized by answer icons or other visual answer possibilities.



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Some suggestions for Questions:

1. I enjoy playing this game. [Totally agree / Agree / Medium / Do not agree / Do not agree at all]
2. I have good knowledge of civic education topics. [Totally agree / Agree / Medium / Do not agree / Do not agree at all]
3. I want to know more about training programs run by FES. [Totally agree / Agree / Medium / Do not agree / Do not agree at all]
4. This game improved my understanding of voting systems. [Totally agree / Agree / Medium / Do not agree / Do not agree at all]
5. My gender is... [Male / Female / Other]
6. My age is... [5 - 17 / 17 - 29 / 30 - 39 / 40 - 49 / 50 - 59 / 60 - 69 / 70+]
7. Please select the country you live in. [list of countries]

If questions appear in different types of questionnaires (for instance pre and post), the answers can be compared to check if the game has had a direct impact.

d) Real Life Challenges (RLC) : Event-based

Real Life Challenges (RLC) actively take the player out of the Magic Circle of the game. The Magic Circle in Game Design is the protected environment in which the player can try out different things and go for trial and error without consequences in the real world. RLCs trigger the reflection

of the learning content by the user and try to stimulate a mental transfer to the context of the player. The RLCs in this game can be represented as events but require an additional functionality. The user must type in a certain amount of text and send it to the server to complete the real life challenge (similar to a tweet that only FES and the developers can read). There is no right or wrong answer to a question. The user needs to reflect on the question and answer it for her/his own context. While counting the amount of answers sent by users, FES can quantify the number of awareness raising and reflection processes of users. However, a minimal quality check of the answer needs to take place. There are different possibilities such as quality check by moderators, peer to peer check or by a simple AI. The AI checks if their text is likely to be solid and approves it. Conditions: min. 30 signs, min. 8 different letters.

Some suggestions for Real Life Challenges:

1. Your real life challenge - Did you vote already? Which system was it? Please type them in here:
2. Your real life challenge - Which SDG is most important for you personally? Please type them in here:
3. Your real life challenge - How did this game affect your life? Please type them in here:
4. Your real life challenge - Talk to a friend - what might be the best voting system? Give the answer here in 3 sentences.

e) Voices from the community / Indirect Impact

Measuring indirect impact is even harder than measuring direct impact. Indirect impact can be measured via stories and voices from the community, success stories etc. These voices can be analyzed on connected online platforms, social media or on other training activities run by FES. The project should collect this kind of data when it appears and insert it to the impact report. For instance: "A friend of mine showed me the P21 Game and I loved playing it. There I learned that there are more training activities run by FES, so that is why I am in this training right now!" Especially in the comments of the stores or on Social Media (e.g. a fan page of the game or a page related to the project), the voices from the community can be analyzed. For instance: "The game helped me to understand the concept of the SDGs!". These statements can hardly be quantified but can be seen as qualitative data to gain a better understanding of the impact of the game.

f) Ingame Experiments

The game could separate the users in 3 groups: Group A receives additional information 1 ("Humanimals slaughtered humans again!"), Group B receives additional information 2 ("Humanimals are open for peaceful negotiations with humans!") and Group C is the testing group that does not receive any additional information. Then an ingame event requires a decision by the player: "An injured humanimal is approaching your gates. Will you let them in and spend a personal resource to heal it?" The decisions made by the players should be compared and correlated with those belonging to a group (A, B oder testing group) to check if this kind of ingame

propaganda influences the decisions made by players. These kinds of ingame experiments can take different shapes and test the decisions made by the players from time to time.