Co-creating a gamification tool for children and parents to improve their food nutrition knowledge and dietary habits.

FOOD SYSTEMS IN TRANSFORMATION

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The TITAN project
Increase transparency in Food System by:

❖ Activating a **Network of Expertise** composed by stakeholders of different supply chains.
❖ Identifying **breakthrough technologies to transform Food System**.
❖ To provide a range of **co-created demonstrated transparency initiatives** and solutions that will facilitate consumers making improved food choices.
❖ Elaborating a set of **policy recommendations**.
❖ Developing 15 **pilots** by using innovative technologies, such as AI, Blockchain and IoT.
❖ Awarding 8 **other pilots** through an Open Call with an overall budget of 1.25 M€.

**Pilots for Health**

Pilots included in this group aim to increase transparency in the food chain and **help consumers to make improved health choices** with a set of innovative technologies focused on environmental and nutritive values of foods and affordable BC technologies.
Partners involved in TITAN 6.1c Pilot Case

IT company
Experts in preventing food waste throughout the whole value chain, automatization, and young children's interventions.

Food Research Center
Consumer researchers.
Previous related projects based on the gamification approach and similar content.

Gamification experts
Gamification at the service of learning and awareness-raising.

Technology-based company
Use of AI for the development of predictive models and interactive tools such as chatbots.

Department of Food and Nutrition
Experts in food education, public health nutrition, sustainability of food consumption, dietary assessment methods, and nutritional epidemiology.

Experts on psychology
Children and adolescent interventions experts
SOME REASONS WHY...
"Childhood obesity is associated with a higher chance of premature death and disability in adulthood."

World Health Organization

According to a WHO report from Decembre 2021, globally:

✓ In 2030s, 4% of children will be overweight or obese.

✓ In 2020, 15% of children were stunted in growth due to malnutrition.

Education can be a tool to:
✓ Change unhealthy eating habits.
✓ Develop healthy eating habits at early stages of childhood.

Communications Officer World Health Organization. (2021). WHO accelerates work on nutrition targets with new commitments. https://www.who.int/news/item/07-12-2021-who-accelerates-work-on-nutrition-targets-with-new-commitments
Food education

- **Non interactive approaches.** Children’s direct participation is not needed.
  - Informative lessons.

- **Interactive approaches.** Children have to directly participate.
  - Farm & Harvest activities.
  - Cooking activities.
  - Tasting sessions.
  - Gamification.

The background

Bigger and longer changes
OUR PILOT CASE
Our Goal

“\textit{To provide educational content of interest to parents and children aged 10-12 years towards healthy nutritional habits to avoid health problems caused by prolonged poor diet, (i) by using new technologies, (ii) an adapted communication style and (iii) seen from a child’s perspective.}”

Funny and interactive way of learning

Clear and trustable information
- Food nutrition
- Food science
- Food sustainability

AI Technology
- Child-based focus
- Appropriate language style

How should I eat in a healthier way?
How to reduce food waste?
How should I eat in a more sustainable way?
How is food processed?
INTERACTIVE PLATFORM with different resources, interactive AI tools, a gamming experience for children aged 10-12, and specific content for educators and parents.

EDUCATIONAL CHATBOT
Software that simulates human-like conversations with users via text messages on chat.

IMAGE RECOGNITION SYSTEM
To take pictures of food and get information through the chatbot or to solve challenges proposed in the game.

GAME EXPERIENCE
To learn by interacting with the real environment, beyond the passivity of the screens.
The educational content will be given through an **interactive** approach, which rely on the direct implication of different actors:

- **Children**
- **Teachers, educators**
- **Stakeholders**
- **and parents.**
Co-Creation = participation of end-users in the process of developing a product or a service.

Different actors as co-designers of the tool - decide how it should be designed.

A multitude of techniques; personas, scenarios, mockups, image boarding, interviews, focus groups, questionnaires, diaries, observations and thinking aloud.
**Different approaches**

### Countries
- Spain
- Poland
- Finland

### Methodology
- **COCREATION SESSION-FOCUS GROUPS**
  - Parents: 2 sessions
  - Children: 6 sessions

- **IN-DEPTH INTERVIEWS**
  - Teachers
  - Stakeholders

### Target
- 240 / country
  - Families with children between 6-12 years.
Different approaches

Warm-up and hook.

Discovering the target:
• Give context about the game being created
• Identify what they are interested in with regard to food
• Identify whether they understand the food categories and identify the products behind those categories.
• Adapt the chatbot’s vocabulary to a language understandable to children.
• Identify what aspects of the game they find most interesting, attractive.

Building with the target:
• Feedback for mission design
• Providing mission ideas to developers

Co creation missions: sharing ideas generated

Warm up
The role of healthy and sustainable food habits
Approaches and tools
Tool ideation
Concept evaluation

COCREATION SESSION- FOCUS GROUPS

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Different approaches

IN-DEPTH INTERVIEWS

Teachers
Primary school teachers (6-12 years)

Decision-makers:
School director
School catering company coordinator

Specialized professionals
Speech therapist
Psychologist
Pedagogue

Educators in other contexts
Ecological producer in cooperative.
Teacher in farm school.
Trainer

Content experts
Nutritionists

Parents
Families with 6-12 years old children

Parents
Families with 6-12 years old children
Different approaches

240 / country QUESTIONNAIRE

Objective
Adapt the tool to the real needs and barriers that influence dietary behaviour.

More than 40 questions regarding:

✓ Knowledge of healthy and sustainable eating,
✓ Compliance with dietary recommendations
✓ Consumption, eating habits and attitudes

Health
Sustainability

Adults  Children
RESULTS
Both targets are used to play with similar tools (children and parents).

Even environmentally conscious people need to know more about sustainable food, or the way to eat in a healthy and sustainable way in certain moments.

The attitudes of adults certainly prevent the transition of their kids quite a lot. Food service and teachers in schools can also play a key role in changes.

There are some mentions in the school meal recommendations, in the curriculum of early childhood education..., although it's at a rather abstract level. It depends on the individual teachers', principals', and other employees' own interest.

Vegetables and legumes could be used more, less saturated fat, change to lower-fat dairy products and increase plant-based products.

Infographics, videos, very visual, escape games... tik tok... Any digital tool... but there is a big RISK!!!
Feedback on the gamification part

✓ High identification with the characters.
✓ Very good evaluation of the characters, the ships, the space setting.
✓ Many possibilities to customize the characters and add their own personality.
✓ Different levels. Gaining incentives.
✓ Many ideas for missions and challenges and storylines for the characters.
Ideas for missions or challenges for the game

✓ New missions.
✓ New characters,
✓ New spaceships built together.
TOPICS OF INTEREST FOR PARENTS

NUTRITION
- Dietary guidelines
- Serving sizes
- Nutrition claims
- Nutrition labelling
- Other labelling
- Ingredients

FOOD SCIENCE
- Food chemistry
- Food safety
- Food processing technology
- Product development

TRANSPARENCY
- Food fraud
- Origin

SUSTAINABILITY
- Carbon/water footprint
- Resource use
- Organic food
- Local food
- Seasonal food

OTHER
- Curiosities
- Jokes
- Recipes
- Riddles

Recognising foods
Time between meals
Ideas to help achieve healthy eating
Healthy lunch ideas
Number of meals per day
Vocabulary for healthy and sustainable eating
Ideas for what to bring to birthdays
Simple kitchen experiments.
Food and sport
Links to websites and official pages
Recipe book of healthy recipes
Difference between what nourishes and what nourishes
Are processed products healthy?
Upcycled Food
Seasonal food

EMOTIONAL ASPECTS

CHATBOT
- Number of meals per day
- Ideas for what to bring to birthdays
- Healthy lunch ideas
- Time between meals
- Ideas to help achieve healthy eating
- Vocabulary for healthy and sustainable eating
# Tips for a good diet: nutrition and healthy eating habits

- Distinguishing good foods from less good ones
- Proper portion sizes
- How to Interpret the Food Nutrient Label
- Ingredients

# About which of these topics you would like to know more/learn?

## Nutrition
- What is the origin of food
- Meet the people involved in the food chain

## Transparency
- How food is made
- Experiments in the kitchen: to better understand food

## Sustainability
- Know which foods are more sustainable, better for the planet
- How to throw away less food
- Know the foods that are in season

- Curiosities about food
- Recipes
¿DO YOU KNOW WHAT FOODS ARE BEHIND EACH OF THE CATEGORIES/GROUPS?

1. FRUIT & VEGETABLES
2. MEAT, FISH and SIMILAR
3. PULSES
4. DAIRY AND EGGS
5. FATS
6. CEREALS AND DERIVATIVES
7. BEVERAGES
8. PROCESSED

CHAT-BOT WITH 227 FOOD ITEMS
CONCLUSIONS & NEXT STEPS
1. **AI technology as a tool**
   - The cocreated tool will be used in an intervention study to foster healthy and sustainable eating habits.

2. **A tool to connect with the real world**
   - Challenges that encourage healthy and sustainable habits in real life and competing and challenging them, something that children like very much. Challenges that encourage real contact with other children, and collaboration.

3. **Very good overall assessment of the idea of the tool.**
   - It is defined as dynamic, attractive, interesting, fun and above all it fits with the idea projected to address the target.

4. **Be careful with the tool**
   - There is reticence among families about overexposure to technology and the use of a digital tool for learning and establishing new habits at home, which is why it is considered more appropriate to work at the school.

5. **Child-friendly language & style**
   - Language and vocabulary totally adapted.
After identifying key information, the starting point of the solution will be finally developed, validated, and tested in different scenarios.

Interventions and pilot cases will be held in order to test the usability, perception and impact of the tool: The platform will be introduced at school, but suitable for use at home.

Gamification part will be tested.

Tool will be adapted and translated to different languages.

Questionnaire analysis: Cultural differences will be considered.
Thank you very much!!

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Do you want to know more????
See the video of our TITAN Project!

If you are interested in our tool, just contact us!!!
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