Social Engagement and Cultural Adaptation of Young Refugees Through Gaming and Playful Design

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Abstract The document addresses one of the main themes of the present day, i.e., the problem of forced migration—commonly referred to as seeking refuge. The target user of this study is exiled children who, in most cases, arrive at their destination alone and with few or no primary survival conditions. UNHCR (2015) points out that more than 65 million people worldwide have had to leave their home countries for war, climate change and/or political or religious persecution. Within this number, 1 in 200 children worldwide are refugees, representing 52% of the total refugee population (UNICEF 2016). In this scenario, in addition to being victims of school dropouts due to migration, many children end up developing trauma, anxiety, and suicide attacks, resulting in less favourable conditions, sometimes living in shelters. The methodologies developed by Ellen MacArthur Foundation and IDEO—respectively, Design Thinking and Human-Centred Design—aimed to understand how design can positively influence the cultural adaptation of these children. For the best development of this research, the subject was studied through official data from the leading organizations operating within this panorama and the analysis of some projects that promote social inclusion. Finally, in response to the proposed issue, we defend the relevance of a playful, educational, sustainable and focused on circular economy design. Through it, the user could learn by playing the language and the customs of the new country. Besides, it could prevent the exposure of the users to dangerous situations—which they are vulnerable.

Keywords Inclusive design · Social innovation · Cultural adaptation · Young people · Refugees · Sustainability

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1 Introduction

According to Pazmino [11], especially in the last decade, there is a need to create new solutions through real projects to solve social and environmental problems. For this, during the creative phase of a product or service development, it is necessary to prioritize those requirements while taking into consideration technical, economic, aesthetic and symbolic aspects.

The social aspect is also applied to design, targeting areas that the industry has shown few interests and providing solutions that can increase the quality of life. Thus, design can be rebuked along with ideas of solidarity and moral responsibility [11].

That said, this paper addresses one of the main themes of present days, i.e., the problem of forced migration, commonly referred to as seeking refuge. The target user of this study is exiled children who, in most cases, arrive at their destination alone and with few or no primary survival conditions.

According to the UNHCR Report (2018), more than 69 million people worldwide had to leave their countries of origin as a result of war, climate change and/or political or religious persecution. Although the United Nations High Commissioner for Refugees (UNHCR) [13] Data Report stated a drop in the number of refugees in Europe, a large percentage of people continue to risk their lives on alternative routes searching for safe territory. See Fig. 1.
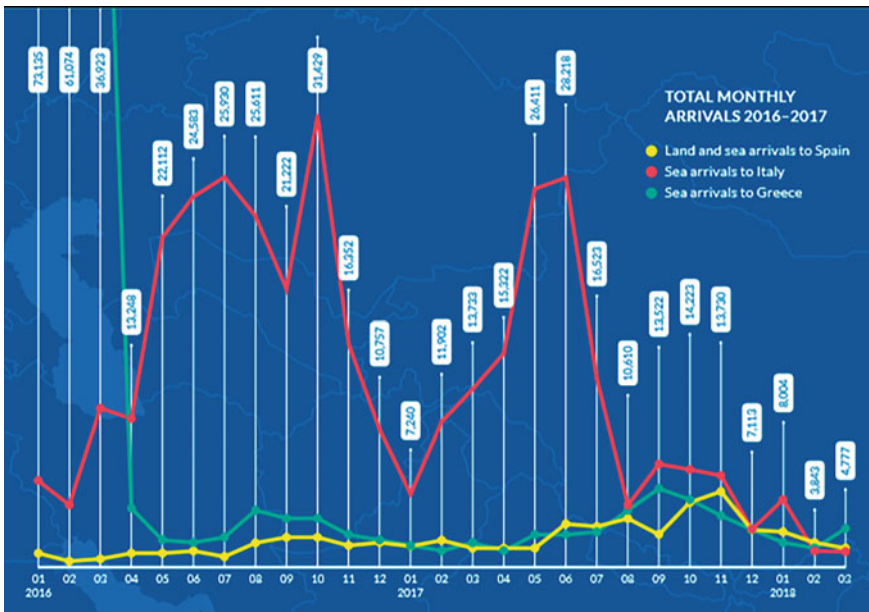

Fig. 1 Evolution of the number of refugees in Europe (Adapted from UNHCR [14])

9 out of 10 refugee children are estimated to be unaccompanied (UNICEF, 2016). The figures include the number of Syrian children arriving by sea in Europe, representing 92%. The European Commission describes this situation as the biggest humanitarian crisis since the time of World War II.

According to the UNICEF's report (2016), 1 in 200 children worldwide is refugees, representing 52% of the total refugee population. In this scenario, due to the time lost from migrating, the children are victims of at least 1-year delay in schooling. Besides, many children end up developing traumas, anxiety, psychological distress, and in worse cases: suicide. Often this results in less fortunate conditions, such as living in shelters.

> They know what hunger, physical suffering or fear are. They have marks that remain in the psyche and in the body, marks that appear in somatizations, in nightmares, in distrust, in the feeling of persecution. As various authors pointed out, these are events that place the child in a vulnerable situation due to a clinical mental health situation (Borges 2014) [10].

Based on the methodologies of design thinking, human-centred design and circular economy—developed by the Ellen MacArthur Foundation and IDEO—the researchers of this study intend to understand how design can positively influence the cultural adaptation of these children.

Brown [4] already mentions that design thinking is the set of principles that can be applied by many people to a wide variety of problems. The author also comments that it is a systematic approach that allows innovation and goes beyond the need to produce a product or service because it is assertive to the point of entering directly into the user's life and may even dictate certain future behaviours.

Thus, design thinkers are based on how to use the product, objects, and services that should be engaged. This enables pattern discoveries as well as the discovery of new ideas, converting problems into opportunities [4].

The phases of this study were based on the design thinking stages proposed by Baeck and Gremett [2], which are summarized in 5 stages: empathy, definition, idealization, prototype creation and testing. In addition, Fig. 2 addresses the main contributions of using this process. The attributes of the method are summarized as flexible, collaborative, constructive, inquisitive, empathic, holistic, iterative, non-judgmental and open-minded (Figs. 3, 4, 5, 6, 7 and 8).

According to Burdeck [5], until the late 1970s the design was done in a deductive and predictable manner. Only in the early 1980s, it began to be inductively considered. As a result, it became more important to search for answers in the user, for whom the product was being developed. The user desire and needs, as well as, the basis of their behaviour should be considered.

For IDEO [8], the process is called "human-centred" because the starting point is the people that the solution is developed for. The Human-Centred Design (HCD) process begins by analyzing the needs, desires, and behaviours of these people whose lives one wants to influence. We seek to hear and understand what they want and seek. Once the user's desire is identified, they begin to examine viable solutions.
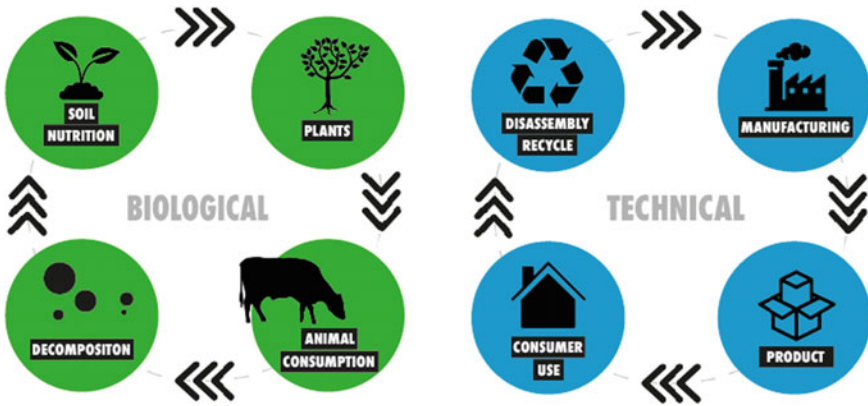
Fig. 2 Biological and technical cycle of the circular economy (Project Author)
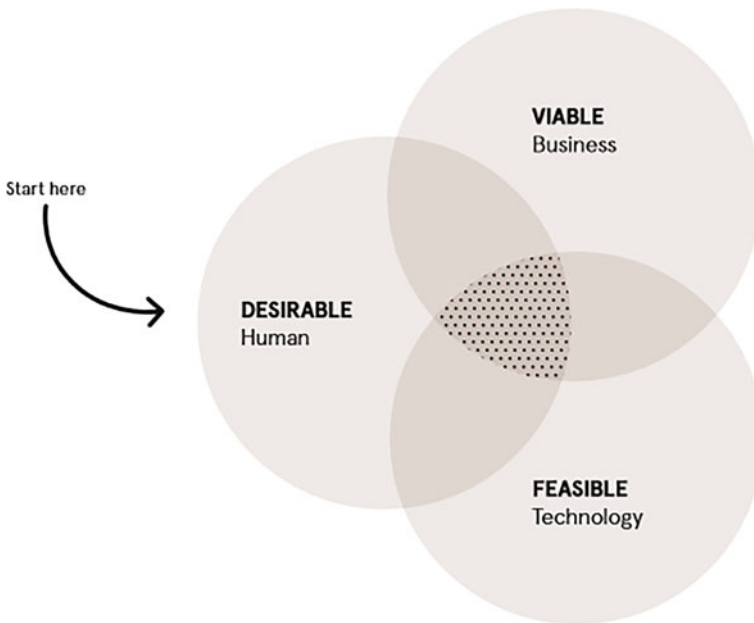

Fig. 3 HCD insertion lenses (IDEO 2017)

The Human-Centred Design process begins with a specific strategic challenge and continues through three main phases: listening, creating, and implementing. During the process the team will change from concrete to abstract thinking, identifying themes and opportunities, and then back to concrete with solutions and prototypes [8].
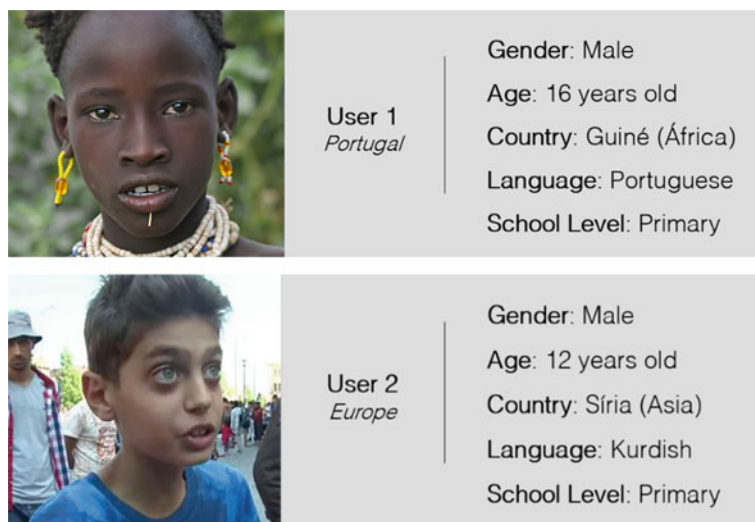
Fig. 4 User's profile (Project Author)

Fig. 5 TÎNI Card (Project Author)

Another methodology applied in this research was the circular economy model that has gained strength in society due to the possibilities of success while reducing dependence on primary resources and energy. The central idea of circular economy is that an open production system—where resources are extracted, used to make

Fig. 6 Action Cards (Project Author)

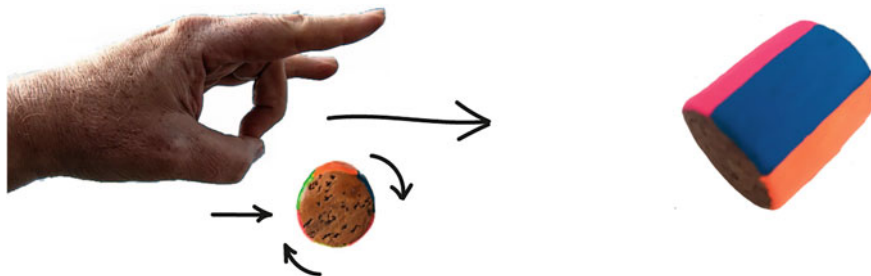**Fig. 7** Reward Notes (Project Author)

Fig. 8 Color Cylinder (Project Author)

products and become waste after consumption—should be replaced by systems where resources are reused, and energy is conserved [9].

Therefore, it is clear that achieving economic development—that combines prosperity with sustainability—requires moving from a short-term value-driven system

focusing on the process to a long-term process-driven economy based on the value within a systemic framework (CNI, 2018).

In a circular economy, the product is designed to create minimal waste by allowing it to be easily repaired or its materials to be reused or updated. Value creation is built on the longevity of goods and new forms of consumption (Schulte, 2013). Thus, its integration into the product is still important in the initial phase since it is the period in which the specifications are created [3].

For the best development of this research, the subject was studied through official data obtained with the leading organizations operating within the refugee's context in Portugal. In addition, we analyzed cases of studies from projects that promote social inclusion, such as expressed below. Thus, some important data stand out:

- Origin of Refugees in Portugal (ACM, 2017, p.6): Síria (55%)
- Situation of Refugees in Portugal (ACM, 2017, p.5): Minors (24%)
- Gender of Refugees in Portugal (ACM, 2017, p.6): Male (63%)
- Age Range of Refugees in Portugal (ACM, 2017, p. 6): > 18 years old (35%)
- Refugee Children in the World (UNHCR, 2017, p.25): Children (52%)
- Refugee children attending school (UNICEF, 2018, p.15): Delayed school 1 year or more (58%)
- Refugee Children School Level (UNHCR, 2018, p. 15): Primary (61%)
- Situation of Refugee Children and Youth in the World (UNICEF, 2018, p.13): Alone (44%)
- Gender of Refugee Children / Youth in Portugal [7]: Male (84%)
- Origins of Refugee Children / Youth in Portugal [7]: Guiné (40%)
- Ages of Refugee Children / Youth in Portugal [7]: 15–17 years old (92%)

It was identified that the main focus of the product should be the cultural and school adaptation of refugees in the destination country, based on the information already highlighted in the research. Thus, two user profiles were created and adopted for this work, the first referring to the characteristics of a refugee in Portugal, and the second related to characteristic of a young and refugee child in the European Union.

The design conception began through brainstorming the main characteristics that the product, in this case, the game we call Tîni should have. Tîni is a reference to the word "welcome" in Portuguese, Kurdish, Creole. Thus, we developed the attributes that the game should work on:

- Learn and revise the local language of the destination country;
- Learn local habits;
- Interaction with other children/young people;
- Encourage emotional, financial and cultural independence;
- Encourage motor skills;
- Overcome cultural barriers;
- Create or give back to these children/young people dreams and hope in the future;
- Provide protagonism and dialogue to these children/young people;

- Present new possibilities;
- Positively influence their lives;
- Prevent risky situations;

We realized that it would be ideal for the user's profile to interact with something intuitive, simple and easy. In such a way that the most appropriate typology would be the set of paper and pen and card games. The summary of the subjects and their referred importance to the game approach are below:

Language Association	To add more domain and word revision of the language
Portuguese Habits and Customs	Learning habits of the population that may differ from the usual in another country
Educational and Financial Mathematics	Practical learning of the importance of math in their lives for greater financial independence, based on strategy, budgeting, the anticipation of expenses, etc
Refugee Protection Laws and Human Rights	In addition to learning about the subject, knowing what rights and laws protect them to feel more secure regardless of the country you are in
Art and Culture	To boost curiosity about the world and life
Ludic and Play activities	Stimulating creativity
Prevention of Risk Situations	To prevent and instruct them on how they should respond to such facts

Moreover, to be more interesting for the young audience and children we added, a set of playful and dynamic cards, as well as actions cards, like Pass the Turn, Reverse Order, Earn Points and Lose Points. Although severe reality issues are addressed, these cards soften the game, providing the positive and fun aspect proposed.

To encourage financial education, the points won and lost with the questions in the cards will be computed monetarily with bills. Our goal is to boost values such as game strategy, score calculation, budgeting, planning spences and profits. All the cards of the game, such as main cards and reward bills, were made with recycled paper. The reward bills were developed in the measures of 5.0 cm × 9.5 cm also on recycled paper, but in weight of 90 g. The design was inspired by the 5, 10 and 50-euro bills to promote the association with money.

To create the color cylinder we used a conventional wine's cork painted with varnish enamel paint and varnished. To use this cylinder, one must roll the cork horizontally and let it stop with one of the colors at the top. This will substitute the traditional dice.

Instructions: The game consists of cards and bills and can be played with 2 to 6 people. Each player starts the game with 100 assorted reward bills. Each player in their turn must roll the colorful cylinder, while the other player asks the question. Each card in the deck corresponds to a score so if the player gets the question right,

earns the points and if gets the question wrong, lose the points and must return the points from their reserve to the game's bank. The player who asks the question must read in order: the theme, the score and then the question. Thus, the score— credited or subtracted from the player based on the correct or incorrect answer— corresponds to the value of the bills to be withdrawn or added to the game's bank. Wins the game the player with the highest savings or the player who most quickly reaches 1000 points.

For the last phase of the methodology— tests, evaluations and comments— we got in contact with groups that work with refugee children to test the game. Refugee organizations, groups and institutions were sought, but because the game has some sensitive subjects, the ethical council should approve it first, which would take at least 4 months.

Thus, we chose to do an informal test with refugee and non-refugee children. The test was carried out informally at a fair on May 25, 2019, with young refugees of 14 to 17 years old, originally from the Republic of Congo (1), Cameroon. (2), The Gambia (1) and Syria (1). After the test and interview with the group, we discovered the following information:

- Since some refugees from Cameroon had recently arrived and had not started attending Portuguese classes, but had already registered, we could attest that the language of the game was challenging;
- The colourful cylinder used in place of the traditional dice provoked curiosity among young people. All praised how it is innovative, practical, and easy to draw.
- The group did not show any difficulty in understanding the game and how to play it. The group perceived the game as intelligible and intuitive.
- They emphasized that for implementation elsewhere, subjects such as on Rights/Obligations/Regulations in the Service of Foreigners and Borders, Places and Geography of Portugal, Portuguese Habits and Customs, should be reviewed and adapted with their respective country's information.

Also, for the evaluation of the game we consulted professionals from the areas of pedagogy and psychology. In the area of pedagogy, we presented the game to the professor and doctor in education Maria Augusta Olivieri Sá Barreto. Maria Augusta is one of the most influential educators and researchers in the field of learning assessment and school planning. She works specifically in projects and schools concerning children and youth traumatized by social reality.

In the interview, the researcher highlighted the educational nature of the game and how the playful approach is important for learning since it relates to the child's reality. The schooling proposed is achieved through understanding the value of money, financial mathematics, and language association. This favours not only those who do not know the language by introducing it, but also favours those who are already familiar with the language by using the regional questions.

In the area of Psychology, the consulted professional Ana Cláudia Laviano, emphasizes the importance of the game regarding the prevention of dangerous situations since it provides awareness and knowledge about how the child should act in such experiences. She highlighted the sensitivity and care in the approach of

the game and the welcoming aspect present in the exchange of dialogue between the participants. Even if there is no identification in the foreground, due to the way the question is approached, there is a later association that consequently brings about the change in the form of acting and perceiving the actions related to that content.

In the view of the specialist, the game is highly enriching in favouring interaction and the exchange of experiences between players concerning difficult subjects. The fact that the problems are recognized in-group makes the process very encouraging and welcoming, since it causes a sense of security and support. When the question is asked, the young person automatically makes the association, even if at first there is no awareness, as the game progresses, someone who knows the subject will identify it.

Concerning the issue of the game achieving the goal of providing to exiled youth and children the possibility of dreaming and hoping again: both professionals interviewed agree that it is a challenging but very important process in this scenario. As a result of a positive perspective of the future, one can change the situation in which one lives, causing a change of behaviour, which allows one to reach new possibilities.

Finally, concerning our proposed objectives, we designed a playful, educational product, supported on sustainability and circular economy pillars. We developed an innovative solution through gaming and playing as a learning strategy to achieve that.

2   Conclusion

The developed game offers a new way of learning the customs and culture of the new country, preventing the users from being in dangerous situations to which they are vulnerable and providing a different way of understanding the new native language. The game's primary goal is to materialize the experience of a good welcoming moment through skills and knowledge construction. The game should provide these vulnerable youth or children space and resources for a better adaptation process, integration and engagement in society. It also promotes the possibility of a playful moment of intercultural dialogues and sparks the ability to dream again.

Because the objective is to learn and revise the local language, we emphasize that the game should not be played in English, even though it is a universal language. The game can be used in Portuguese classes promoted by public institutions since the offer of these courses is expressive.

Adaptation potential allows its transformation to new social standards adopted in the country where it has to be applied. Although designed for Portugal, the game is universal. It can be adopted in other countries by changing the information on the cards about Country Geography, Habits and Customs and Rights/Obligations/System Regulations.

Last but not least, the present work is expected to open the way for further research and action for this significant forgotten portion of the refugee population. Several projects are developed in refuge initiatives, but most are for shelters and the migrant

adult population. Supporting and welcoming projects for this underage audience can potentially save lives by promoting the ability of children and young people to dream again.

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