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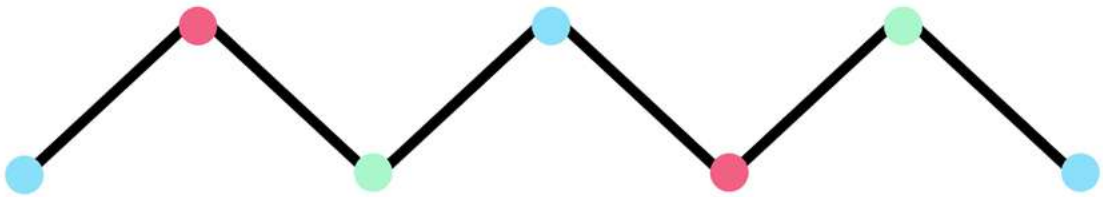

GYM KHA NA 5.0

Cultural Heritage for Youth

METHODOLOGICAL MANUAL

ROSTO SOLIDÁRIO
Organização Não Governamental para o Desenvolvimento

Consejo de la Juventud de Castilla y León

CEIPES
CENTRO INTERNAZIONALE PER LA PROMOZIONE DELL'EDUCAZIONE E LO SVILUPPO

Dione

fundación aspaym castilla y león

Material elaborated in the project “Gymkhana 5.0”

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Consejo de la Juventud de Castilla y León - Spain

Partners:

Fundación ASPAYM Castilla y León - Valladolid, Spain

Rosto Solidario - Santa Maria da Feira, Portugal

CEIPES - Centro Internazionale per la Promozione - Palermo, Italy

DIONE Youth Organisation - Nicosia, Cyprus

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DEFINITION

DESCRIPTION OF THE PROJECT

"Gymkhana 5.0: Cultural Heritage for Youth" is a project aimed at expanding and developing the skills of youth workers and youth service providers through the use of a methodology based on gamification that develops and enhances knowledge in European and cultural heritage education among youth, especially among youth with fewer opportunities. The idea is to increase the level of quality in pedagogical methods and have a broader number of methodologies to be used, especially with young people with special needs.

Therefore, the strategic partnership that this consortium intends with this intellectual output is to generate an educational game that allows youth workers and youth service providers to generate the ideal simulated contexts in order to promote, through their own game, heritage and cultural learning of the selected cities where we will initially implement the project (León, Palencia, Santa Maria da Feira, Palermo and Nicosia). To achieve this, the game will be implemented in each one of the cities in a personalized way, establishing an itinerary tour (Gymkhana) consisting of challenges, games and explanatory videos that will motivate the youth to complete this tour and to enhance their knowledge about our cultural heritage. In addition, all information regarding accessibility will be provided, both the cultural heritage on which we intend to act and the routes taken to reach this heritage, thus facilitating the active participation of young people with physical disabilities or reduced mobility.

Taking into account the target group of people with reduced economic resources, we made sure that all the locations and interesting sites are free of charge for the participants.

GAMIFICATION RESEARCH

The development of this proposal belongs to a path of research, networking and discoveries about European heritage and cultural education and the importance of involving youth, especially youth with fewer opportunities, using a methodology based on gamification with the aim of making these contents more attractive and motivating for their learning. To prepare the project, all partners have reviewed a series of specialized documentation on the subject of the project and have considered the strengths of each in relation to this issue.

Gamification is the application of game-design elements and game principles in non-game contexts. It can also be defined as a set of activities and processes to solve problems by using or applying the characteristics of game elements. Gamification commonly employs game design elements to improve user engagement, organizational productivity, flow, learning, crowdsourcing, knowledge retention, employee recruitment and evaluation, ease of use, usefulness of systems, physical exercise, traffic violations, voter apathy, public attitudes about alternative energy, and more. A collection of research on gamification shows that a majority of studies on gamification find it has positive effects on individuals. However, individual and contextual differences exist.

Gamification techniques are intended to leverage people's natural desires for socializing, learning, mastery, competition, achievement, status, self-expression, altruism, or closure, or simply their response to the framing of a situation as game or play. Early gamification strategies use rewards for players who accomplish desired tasks or competition to engage players. Types of rewards include points, achievement badges or levels, the filling of a progress bar, or providing the user with virtual currency. Making the rewards for accomplishing tasks visible to other players or providing leader boards are ways of encouraging players to compete.

Another approach to gamification is to make existing tasks feel more like games. Some techniques used in this approach include adding meaningful choice, onboarding with a tutorial, increasing challenge, and adding narrative.

Gamification has been attracting attention in the context of education and training as it offers a variety of benefits associated with learning outcomes. There is some indication that gamification can be particularly motivational for students with dyslexia in educational situations. There is also an increasing interest in the use of gamification in health sciences and education, where interactive polling, adventure games and other modes can be employed to enhance engagement and interactivity with the course content.

Gamification is also used in corporate training to motivate employees to apply what they learned in the training to their job, theoretically this should improve performance. According to a study conducted by Badgeville, 78% of workers are utilizing games-based motivation at work and nearly 91% say these systems improve their work experience by increasing engagement, awareness and productivity.

Recently, gamification is emerging as a new form of occupational safety training. Thanks to technology, it can provide realistic and effective simulations of real-life experiences, making safety training less passive and more engaging, more flexible in terms of time management and a cost-effective alternative to practice.

The project has an innovative approach to the methodologies used in the field of heritage education because the use of gamification techniques is relatively recent, although it has already proved good results among youth, as we have seen. Formal methods of working with these target groups do not always have a great result, as the mentalities and social backgrounds of the community are changing a lot lately and youth workers, trainers and professionals in contact with youth are in a position to improve continually working with new tools that include multiculturalism, differences in religion, traditions, lifestyles, social disadvantages, psychological problems or disabilities. That is why we have thought of gamification as an innovative way to help the target groups we work with.

From an analysis of specialists, we have discovered that gamification aims to introduce creative and innovative structures from games to turn an activity, a priori boring, into another that motivates the person to participate in it. In this sense, it has been defined that gamification aims to persuade the person to turn a simple task into an attractive challenge that is worth continuing. The project is innovative because we want to bring together all these effects and translate them into a language adapted to youth workers and professionals in contact with youth so that they can use the methodology and develop new options for learning about our European cultural heritage.

The intellectual results and activities of this project will be useful for youth workers, but will also add value to the field of heritage education through this gamification approach, which includes a set of tools (with theories, application exercises, recommendations for specialists) and an educational game (to make the methodology attractive in focus).

PARTNERS

Each one of the partners in this consortium has experience working with people with fewer opportunities. The Castilla y León Youth Council carries out a multitude of activities aimed at young people with fewer opportunities to encourage their participation in society and to increase their skills through non-formal education. Aspaym Castilla y León Foundation has extensive experience working with people with physical disability, carrying out workshops with different methodologies to promote inclusion and to improve the sensory abilities and wellbeing of these young people. Ceipes works with young refugees and migrants promoting interculturality and their participation in society. Dione Youth Organization has extensive experience fostering the cultural heritage of Cypriot youth, promoting European awareness and belonging. Rosto Solidario has extensive knowledge working with people with geographic and economic obstacles, as well as with people with special needs concerning learning.

YOUTH COUNCIL OF CASTILLA Y LEÓN

The Youth Council of Castilla y León is a Public Entity of Private Law endowed with its own legal personality and full capacity to fulfill its purposes. The purpose of the CJCYL is to promote initiatives that ensure the active participation of Castilian and Leonese youth in decisions and measures that concern them, as well as the representation of organized forms of youth participation integrated in it. The CJCyL is the valid interlocutor of youth with the Autonomous Administration and any public or private institution.

Its general strategic objectives are the following:

- Reinforce associative structures promoting and supporting participation among young people.
- Encourage the youth to get involved in the construction of society, based on solidarity, equal opportunities and justice.
- Promote initiatives and spaces that improve the social and personal development of young people. Know the voice and concerns of young people and effectively transfer it where necessary.

It is a constant desire of an entity such as the Youth Council, to generate consultation spaces with the aim of knowing youth needs, to hold informative events, seminars or debates focused on the mechanisms of representative democracy at all levels, including the operation of the European Union and its Policies.

The Castilla y León Youth Council has been working on non-formal education for more than 30 years, within the area of associations, Childhood and non-formal

Education. It has a “Youth Guarantee Network” of Youth Informants in Castilla y León and held an information and employment advice service for young people for more than 10 years.

To carry out this project we have a team of technicians with experience in coordinating and managing European mobility projects and offering adequate support to the young participants.

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FUNDACIÓN ASPAYM CASTILLA Y LEÓN

Fundación ASPAYM Castilla y León started working in 2004, twelve years after the establishment of ASPAYM in the region of Castilla y León. Its main aims are to promote autonomy, equal rights and opportunities and to increase the quality of life of people with physical disabilities, allowing them a significant integration among the society.

In addition, ASPAYM CyL seeks to be a leading association, providing its target users with the tools to achieve that mission. That goal is reached thanks to the quality of its programs and activities, the research and the proper use of new technologies.

ASPAYM CyL has a youth department focused on activities with young people. This department is an active member of the Regional Youth Council of Castilla and Leon, and also part of the Permanent Youth Council of the Province of Valladolid, where ASPAYM is a member of the board. We are also part of the network of youth information points in the province of Valladolid, which makes it the only entity of young people with diversity that meets everything above.

The organization, and also the youth department, has headquarters in different cities in Castilla y León, with a special emphasis on rural areas. It includes Ávila, Burgos, Camponaraya (León), Cubillos del Sil (León), León, Matapozuelos (Valladolid), Palencia, Paredes de Nava (Palencia), Segovia, Valladolid y Villadiego (Burgos).

The youth department of ASPAYM Castilla y León develops many activities for advocacy, non-formal education, employment, leisure inclusive, etc. One of the most prominent examples is the inclusive camp developed by the entity and which has 18 years of experience and multiple awards, as well as the awareness project "Ponte en mis zapatos" (Put yourself in my shoes), whose main objective is the standardization of disabilities in schools, community centres, youth organizations, etc.

During the last few years, the organization has bet on the use of gamification as a methodology in non-formal education activities. In that sense, ASPAYM CyL has developed board games, video games, escape rooms, escape boxes and manuals based on this technique to work with youngsters, always from an inclusive perspective in order to guarantee equal access to youngsters with disabilities to all the resources available.

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CEIPES

CEIPES – International Centre for the Promotion of Education and Development is an International non-profit association founded in Palermo in 2007. It leads a Network of more than 8 European and extra European associations focused on Education, Training and Social Development.

CEIPES mission is to foster and support the sustainable development of local communities and individuals' empowerment through education and training, human rights and international cooperation.

CEIPES believes that education and development are fundamental values to achieve peace and dignity for all human beings. CEIPES acts as a facilitator for activating the community, through an educational approach in order to create and transform energy and resources. This process is necessary for both individual and social development.

CEIPES has expertise on Education, Transfer of innovation and Project management in different European programmes tackling the Education and the capacity building of different target groups, from young people to adults, from women to unemployed, migrants and disadvantaged groups. It also promotes lifelong learning, vocational training and entrepreneurship with the aim of enhancing opportunities for youth and adults to improve and acquire competences and therefore boost their employability and inclusion.

CEIPES has several links with public and private local and international stakeholders that can contribute to the achievement of project results in terms of dissemination, exploitation and sustainability of them.

CEIPES can count on experienced staff composed of professionals with different competences and fields such as psychology, communication, training, international cooperation, social and cultural mediation, social assistance, ICT, digital manufacturing and law.

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CEIPES
CENTRO INTERNAZIONALE PER LA PROMOZIONE DELL'EDUCAZIONE E LO SVILUPPO

DIONE YOUTH ORGANIZATION

Dione was established in 2016 in Nicosia,Cyprus. It is a non-governmental and non-profit association. The main goals of the organization are to promote the culture of Cyprus and to give motivation to young people to participate in EU projects. Moreover Dione promotes gender equality, anti-racism policies, human rights and social inclusion of people with less opportunities. Finally, Dione emphasizes the development of the skills and non-formal education of young people that are associated with our NGO or with the communities that are in cooperation with Dione.

Dione has 7 permanent unpaid staff plus more than 20 associates and volunteers. Most of them have different backgrounds and specialties that are invaluable to all the ongoing and planned actions to undertake. Moreover, all our staff speaks excellent English, as most of them have studied abroad and in addition several have an expertise in IT skills.

The main activities of the association are the organization of philanthropic cultural events with the participation of amateur young artists such as theatrical performances, festivals etc and the development of European projects,mainly under Erasmus+ KA1 and KA2 actions.

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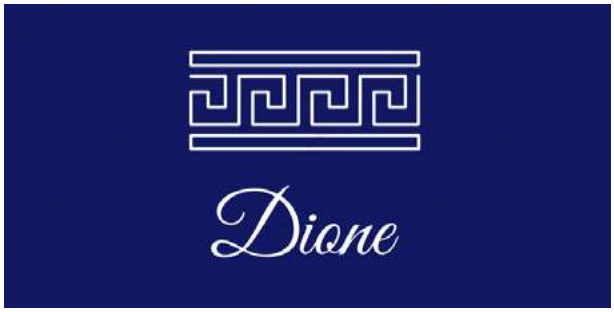

ROSTO SOLIDARIO

ROSTO SOLIDARIO aims at fostering global citizenship and solidarity by enhancing local communities' human and social development. RS core principles are civic participation, social integration, solidarity, networking and partnership. The organization scope of work includes four main areas:

· International Development Cooperation;

· Education and Global Citizenship;

· Volunteering;

· and Family-based Social Support.

Gender Equity, Human Rights and Social Inclusion are addressed as cross-cutting issues in all programs implemented. Also Rosto Solidário takes Non Formal Education approaches to foster lifelong learning opportunities following Global Citizenship Framework.

RS legal status of public utility as an NGO has been recognized by the Ministry of Foreign Affairs in 2008. RS is a member of the Portuguese NGOD Platform and it is represented in the Working Group on Development Education and Global Citizenship.

At the local level, RS is a member of the local network "Rede Social do concelho de Santa Maria da Feira" (host of 115 organizations with social intervention programs - following National Action Plan for Inclusion guidelines).

RS is an accredited hosting and sending organization for European Solidarity Corps / European Voluntary Service projects since 2011. Adding to this level the perspective of the global understanding of the world as well as bringing participants the opportunity to participate in international learning mobility experiences, particularly aligned with Erasmus + programme, RS promotes and is a partner in European voluntary service / European Solidarity Corps, partnership building activities, training courses and youth exchanges. It is also a Eurodesk multiplier.

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OBJECTIVE

Main Objective

To increase knowledge about European cultural heritage in youth, especially in youth with fewer opportunities (refugees and migrants, people with disabilities, youth with social and economic obstacles, etc.) through innovative educational tools based on the use of gamification.

Specific Objectives

To create a narrative/story, challenges and puzzles about cultural heritage to motivate youth to learn about this topic;

To integrate the narrative in a mobile application adapted and accessible to young people with fewer opportunities;

To facilitate the work of workers in the youth field through the design of an educational game focused on European heritage education.

Target-Group

Young people aged from 18 to 30 years old, especially young people with fewer opportunities (refugees and migrants, people with disabilities, youth with social and economic obstacles, etc.);

Youth workers and trainers who are interested in gamification techniques and cultural heritage education;

Interested organizations and institutions, NGOs, tourism offices and services providers who can benefit from this output.

WHAT CAN WE FIND IN THIS MANUAL?

This manual aims to present the methodology that has been developed throughout the Gymkhana 5.0 project and its main findings.

A literature review is conducted on the use of gamification as an educational process and how it can be integrated through new technologies, based on principles of social inclusion.

In particular, it is explained how the use of gamification can be used to increase knowledge about cultural heritage and how the Gymkhana 5.0 project can contribute to this.

The design process of this APP is described, including the justifications for the design options taken, in particular, how concerns about the accessibility of the APP were integrated.

Each partner developed a story, challenges and puzzles about their city, as such, it is also explained how each narrative relates to the cultural heritage of that specific city.

This manual also presents the results of the APP test that was carried out with 25 young people in each city, in order to obtain their feedback and to identify some suggestions for improvement of the APP.

Finally, the impacts of this project are presented, namely on each partner entity.

We hope this handbook could inspire other organisations, educators and youth workers to develop similar tools and to support the development of new games in other European cities.

METHODOLOGY

STATE OF THE ART OF GAMIFICATION

1.- What is gamification

Gamification is not about playing in the classroom, or learning by playing, or any activity that uses technology. It is a complex methodology, with its own elements and techniques, studied by many experts and currently consolidated as an innovative methodology applied in both educational and business contexts.

According to Raduan Jaber et al. (2018) "gamification is a term that comes from the English "gamification", and is defined as the use of game-like techniques, elements and dynamics in non-game environments" (p.199). The same definition is supported by authors such as Burke (2012), who states that "gamification is the use of game-like designs and techniques in non-game contexts in order to develop developmental skills and behaviours" (p.4).

Kapp (2012) also refers to gamification as "the use of mechanics, aesthetics and the use of thinking, to engage people, incite action, promote learning and solve problems" (p. 9).

Based on these definitions, gamification:

> *"can be understood as a technique in which game elements are used in non-game contexts, in order to convey a message, a content and even modify a behaviour, through a meaningful and playful experience that favours the motivation of the individual, achieving this through the use of game elements" (Eduardo Reyes, 2018, p. 2).*

It seeks to involve participants, increasing motivation and encouraging both competition and cooperation among peers. Some of the elements of gamification according to Karl Kapp, Werbach and Hunter (2012) are:

- Types of competition: player vs. player, player vs. system, solo.
- Time pressure: relaxed, with limited time.
- Shortage: of some element.
- Puzzles: solvable problems.
- Novelty: new challenges.
- Levels and progress: to advance.
- Social pressure: of some element.
- Teamwork: in order to advance.

- Currency: exchangeable objects for another value that is more useful to us.
- Renew and increase power: motivates towards the goal.
- Mechanics: these are the processes that trigger the development of the game, that stimulate interaction and engagement. They are the way to achieve the dynamics.
- Dynamics: is the implicit structure of the game, elements that the player introduces into the environment or system.
- Components: these are specific implementations of the dynamics and mechanics. Avatars, badges, levels, teams, rankings, points.

Likewise, the principles of gamification are, according to Mark van Diggelen (2012), cited in Contreras and Eguia (2016):

When we refer to the origin of gamification, we can consider that it started within the business environment, when rewards were first used as a method of attracting and keeping customers. In the 1980s, new mechanisms were created and the ways of playing games multiplied thanks to the consolidation of the video game industry. This playful experience and its influence on behaviour was understood by the marketing world, which adopted the dynamics of video games.

In 2003, the video game and business software designer Nick Pelling, quoted in Contreras and Eguia (2016), coined the term Gamification to refer to a paradigm of how things can be transformed into games in order to achieve specific objectives. At the same time, the gaming culture was gradually being introduced into society, changing the dynamics previously used to achieve different objectives.

In 2010 and 2011, the term began to spread at congresses and conferences, emphasising the idea of fun, transferring the emotions experienced in the play experience to the real world.

Thanks to figures such as Professor Malones and other authors such as James Paul Gee, Ben Sawyer and Peter Smith, gamification began to be applied in the field of education. Currently, gamification is widely consolidated in educational environments and is used with the aim of:

- Increase motivation.
- Improve attention and concentration.
- Promote autonomy.
- To promote meaningful learning.
- To work in a team.
- To develop specific competences.

2.- Areas of application of gamification

Gamification is currently consolidated as an innovative methodology applied in contexts related to health, wellbeing, environment, formal education, non-formal education, leisure and free time, business and marketing.

It is important to note that in recent years, this concept has become increasingly popular in marketing and education, as it is used as a technique to capture attention and engage a specific audience.

Along the same ways, figures such as Raduan Jaber et al. (2018) add that the emergence of the internet, video games and mobile telephony have favoured the increasing use of gamification as an element of educational innovation. Likewise, Area and González (2015) state that:

> *The focus of attention is on gamification in education, given the importance that the benefits of a curriculum design based on the principles of gamification are acquiring, helping to maintain the interest of students and preventing the teaching-learning process from becoming boring or uninteresting for them, reducing the number of dropouts and the lack of commitment to the teaching process, favouring the acquisition of competences (p.3).*

Therefore, gamification has been consolidated in the world of Formal Education as an innovative, useful, diverse and adaptable methodology for every situation. So much so that more and more teachers are being trained in the methods of gamification, ABJ and serious games, and are beginning to apply them both in the classroom and globally in the school.

This introduction of gamification in education arises from a need produced by a change in the educational paradigm, placing the teacher outside the centre of action in the classroom and demanding methodological changes guided by the principles of:

- Activity: active teaching: posing problem situations with accessible solutions, learning by doing, autonomy and research.
- Individualisation: education must be carried out taking into account the individual needs of each person.

- Socialisation: through socialisation, pupils learn to cooperate and accept each other, gaining the necessary skills for social interaction.
- Autonomy: learners are able to make their own decisions. It is based on the idea of learning as autonomous discovery.
- Play: thanks to increased motivation, pupils perceive learning as a pleasurable process, stimulating development and creativity.
- Globalisation: content is organised around axes, ideas and issues of everyday life.
- Creativity: through spontaneity and expressiveness, students learn to solve problems in different ways.

In some cases, gamification experts come to the centre to train the teaching staff or to carry out a playful experience with a classroom, which may be part of a larger educational project. This training is important because, although individual teachers can try and design their own play techniques, training in this area increases the chances that such experiences will be successful and create a climate of fun and meaningful learning among students.It also responds to many of today's educational needs by contributing to:

- Knowing the mechanics, dynamics and elements of games helps us to understand the process of motivation.
- Knowing about previous experiences, examples, games, adaptations, etc. helps us to enhance our imagination and create more diverse experiences. The more surprising and innovative it is, the more attractive it will be for learners.
- Following a guide for the design of projects of this type facilitates our work in the future, making it easier for us to put into practice a similar experience in our school or classroom.

At the same time, a trained and updated teaching team responds to the interests and needs of its students, since they want their opinions to be heard, to follow their interests and references, to learn from context, to make decisions, to cooperate through joint projects, etc. In short, they need to feel that the education they receive responds to the demands of the real world, that it is meaningful and immersive learning.

Apart from the development of collaborative attitudes and behaviour, gamification is also a learning tool for content and subjects, so it is important to remember that all content in the educational curriculum can be gamified.In this way, we can make learning mathematics, history, language, chemistry, the debate on the sale of heritage, politics, languages, art and neurobiology, among others, more fun. In this way, gamification can be used from the first year of kindergarten to the last year of a master's degree.

2.1.- Gamification in non-formal education

According to Texies (2014):

> *today, there is a shift in the skills and competencies that people need to work effectively. Mechanised and routine actions, like most jobs in the 20th century, did not necessarily provide for the development of deep motivation on the part of individuals. Now the challenge is the personal development of individuals, which is possible when intrinsic motivation is maintained, including skills and competencies related to creativity, critical thinking, collaborative work and others (pp. 2-3).*

Gamification responds to this paradigm shift by being applied, in addition to the formal field mentioned above, to contexts related to non-formal education and leisure and free time.

Within these areas we find the popularity of the use of games and playful dynamics, which pursue specific educational objectives, so the development of gamification experiences and Game-Based Learning is considered an innovative methodology when it comes to achieving them.

Authors such as Sánchez-Rivas, Ruiz-Palmero, & Sánchez Rodríguez (2017); Werbach & Hunter (2012) defend the idea that all the advantages of these resources should be taken advantage of regardless of the context in which they are applied, forming part of both formal classroom and non-formal settings.

Some of their differences are that the subject matter in the non-formal sphere can be more open than in the formal sphere, as it is not framed within a closed curriculum, covering a wide range of contents, such as the acquisition of knowledge, the development of ethical values, the improvement of social skills, the promotion of cooperation in a group, the rewarding of specific actions, among others. Moreover, as it is not a compulsory activity, participants may have a more positive predisposition towards learning than in formal education, although, on the other hand, it may also be more demanding in terms of fun, as there may be an expectation that it is attractive and motivating in itself.

3.- Gamification and learning

For authors such as Contreras & Eguia (2016); Marín-Díaz (2015); Ortiz-Colón, Jordán, & Agredal (2018):

> *gamification is an educational strategy that consists of combining the recreational aspect with learning, i.e. to encourage teaching-learning processes to be effective thanks to the introduction of the dynamics of video games, so that people integrate both content and practice in such a way as to increase motivation, creativity and interest in a particular subject or theme (p.48).*

In turn, authors such as Foncubierta and Rodríguez (2014) state that gamification allows learning spaces to be expanded and transferred outside the classroom, as the digital format is familiar and intuitive for students, given that they also use it in their daily lives and in other areas outside the didactic field. In addition, they allude to the introduction of the emotional component within gamification as an essential element in learning, stating that:

> *the connection of gamification with the emotional component is extensive, in fact, everything that engages the senses or implies has a direct relationship to a learning experience as something felt, experiential and emotionally active. What lacks emotion does not attract our attention (p.4).*

It should be noted that in any gamification experience a series of learning and competences can be worked on, such as teamwork, communication skills, creative problem solving and decision making.Likewise, if we refer to specific gamification experiences, multiple competences can be worked on depending on the techniques or games used, such as: digital competence, leadership, negotiation, emotional intelligence, conflict management, time management and learning to learn.

Another of the key elements in the learning process is motivation since, as gamification focused on education affirms, it leads to an improvement in the student's experience throughout the teaching-learning process, which can take place in face-to-face or virtual scenarios. This motivation will be of vital importance when planning gamified activities since, as Csikszentmihalyi and Nakamura (2009) state:

> *the activities performed by the subject must pose a challenge that is possible to achieve, thus maintaining a clarity of objectives that pose a challenge and a response or feedback of the activity performed, whether it is achieved or not. If the activity is too difficult, the participant will fall into a state of anxiety and possibly frustration, and the expected motivation will not be generated. If the task is too easy, the person will tend to get bored, with negative results, resulting in disengagement or disinterest (p.3).*

At a general level, the benefits of gamification in the teaching-learning process according to Jiménez, C. R., Parejo, M. R. N., Villalba, M. J. S., & Campoy, J. M. F. (2019) are:

- Increases motivation.
- Allows active participation.
- Development of autonomy.
- Improvement of self-esteem.
- Respect for different learning rhythms.
- Contextualised and significant learning by putting it into practice.
- Fostering of social and civic competences.
- Develops problem-solving skills in different contexts.
- Allows the possibility of expressing emotions.
- Competitiveness is controlled.
- It provokes a positive and proactive attitude towards learning.
- Develops strategic thinking skills.
- Reduces stress.
- Improves attention.
- Increases cooperation and communication skills.
- It provokes feelings of happiness and excitement.

4.- Gamification and new technologies

According to Marín-Díaz (2015) it is undeniable that in recent decades the focus has been placed on new digital resources and devices as fundamental elements in the teaching-learning process.

In the context of gamification, they highlight the role of technology as a way to automate processes to implement game elements, such as controlling the allocation of points, leaderboards or level changes, as more and more web applications are created based on gamification mechanics and in the field of education.This is because, as Contreras & Eguia (2016) cited in Jiménez, C. R., Parejo, M. R. N., Villalba, M. J. S., & Campoy, J. M. F. (2019) state, "the use of gamification in the classroom is a very effective tool for its ability to teach and reinforce knowledge in a motivating and autonomous way, responding to current demands" (p. 49).

More and more university students are using technology to develop themselves, whether through social networks, mobile phones or video games. Therefore, it is to be expected that, in the coming years, the application of new gamification tools in university teaching could be even more productive than their application to other fields.

Among the gamification tools, there are some web applications based on gamification such as Kahoot, Educaplay, Genially, Quizizz, among others.

One of the most widely used is Kahoot, because this tool promotes technological competence, facilitates motivation and increases the commitment and involvement of students in their own learning process (Kahoot, 2013).

Kahoot is a tool that integrates the game as an important element for the teaching activity in the classroom, making the student learn, but being aware that it is being carried out from a playful perspective. At the same time, this tool allows the creation of surveys, discussions or questionnaires (called Kahoots) by the teacher or the students themselves and the incorporation of images, videos and other digital materials that make the development of an evaluation activity much easier. Another of the contributions of this tool is the possibility for students to create and develop their own Kahoots based on a series of topics or content related to the subject being taught during that educational period (Raduan Jaber et al. 2018, p. 200).

Quizizz is a multiplayer quiz game similar to Kahoot, which allows you to customise and modify the questions to create your own assessment activities or exams in a fun and entertaining way.With regard to the gamification features of Quizizz, this platform offers the possibility of transferring a quiz-type activity to the classroom through a playful, quick and interesting interface for students. Through integrated group participation, students can compete against each other by measuring their own skills such as speed of response and comprehension of timed content in a dynamic competition. Furthermore, it is considered to positively impact on game dynamics by integrating competitiveness, frustration and social interactions with the competition mode in the classroom. Also, the platform, in relation to gamification mechanics, offers the possibility of adding creative aspects of the teacher involving collaboration in class, the delivery of rewards and feedback on the tests performed.

On the other hand, according to González del Hierro for INTEF (2019), emotion is the basis of learning and play increases motivation, improving concentration and favouring problem solving. In this sense, applications such as Genially complement gamification by including elements that allow discovery, exploration and touch. In this way, a greater involvement of the students is achieved and, therefore, the memory of the contents is maximised. When learners are excited, learning simply flows. The same author states that these four characteristics, together with its intuitive interface, ease of use, and more than 700 available templates make Genially an indispensable tool for teaching, as it offers unlimited possibilities (p.6).

5.- Gamification for inclusion

Gamification stands out as one of the active methodologies that presents a relevant effectiveness in meaningful and inclusive learning. According to Vidal-Esteve, López-Marí, Marín-Suelves, & Peirats-Chacón (2018) cited in Jiménez, C. R., Parejo, M. R. N., Villalba, M. J. S., & Campoy, J. M. F. (2019) “technological systems and playful dynamics have burst into the educational field favouring diversity in the classroom as a whole” (p. 51).

One of the objectives pursued by this methodology, if we refer to the case of people with disabilities in a more specific way, is that they develop their autonomy and feel more included in their social environment. Asimismo, según estos mismos autores la gamificación potencia el desarrollo de: las habilidades comunicativas, la expresión de emociones, la interacción social, la función simbólica, la creatividad y el aspecto lúdico, la capacidad de resolución de problemas y las participación como agentes de su propio aprendizaje.

Cascales-Martínez, & Carrillo-García (2018) state that thanks to these active methodologies, curiosity towards learning new content is encouraged, adapting to the learning pace of students, motivating and generating a good classroom climate and thus contributing to the attention to diversity and, therefore, to inclusion.

When we refer to inclusive education, we understand it, according to Muntaner (2019) as:

> *a process that must be sustained by a paradigm shift based on an ideology and approaches to intervention based on the values of law, quality and equity, which must be present in the mindset of educational figures, families and society as a whole (p.41).*

More concretely, when programming a project or an activity, we must take into account its adaptation, since each group and each situation requires specific needs. When carrying out adaptations, it is vitally important to take into account the age, the place, the characteristics of the group and the resources available to us.

One of the most important adaptations when carrying out an activity is accessibility for all people, regardless of their functional diversity. This accessibility must be present from design to final results. To this end, the following questions can be asked:

- Are there any architectural barriers?
- Is the information presented on more than one channel?
- Could anyone play?

If, even taking into account all these aspects of adaptability, the player needs help to play, the personal assistance service would be needed.

6.- Young people and European cultural heritage

Taking into account all the points mentioned above about gamification and how this methodology can favour all the factors that influence the teaching-learning processes, it seemed to us to be a great innovation to use it to bring knowledge about heritage closer to young people.All this is made concrete with the creation of the Gymkhana 5.0 application, since through this accessible mobile application (APP) for young people, specifically those with fewer opportunities, they can internalise all those skills and knowledge in reference to the heritage and cultural aspects (history, history of art, gastronomy, etc.) of five different cities belonging to each of the entities that form part of the European consortium.

The creation of this project responds to a current educational problem, as the educational paradigm has changed and young people are finding it increasingly difficult to stay motivated and focused on the same subject or activity within the traditional educational method, since, as Montero (2017) states:

> *Society has evolved and this also includes education, traditional (behaviourist) methodologies no longer generate the desire to learn but rather boredom and demotivation, so new and better strategies are needed to carry out the teaching-learning process (p. 75).*

Gamification, in this situation, acquires this educational content and adds playable mechanics adapted to the tastes of young people.In this way, this methodology is a great tool to broaden and develop the competences of youth workers, trainers and youth professionals and youth service providers, as they will be able to make use of it whenever they want to enhance European heritage education in youth and, in turn, keep them motivated during their learning process.

Another innovative element is that Gymkhana 5.0 is adapted for people with disabilities, namely visual, hearing, cognitive and physical disabilities, therefore all challenges, games and videos will be accessible, providing the same learning opportunities for all young people and generating an active and inclusive participation in society.

1. GYMKHANA

Gymkhana 5.0 is a project that provides an innovative methodology, since the use of gamification techniques is relatively recent and it presents a unique approach to the field of heritage education. This tool must be very well adapted to the learning needs and motivations of young people. For this reason, when it came to creating a gymkhana on heritage content, the video game/gamification format was chosen. This project emphasizes on reaching out to young people with fewer opportunities, including those with disabilities, those living in rural areas, those with socio-economic barriers and migrant and refugee groups, as they often face a double barrier in accessing educational, cultural and social resources.

The idea of creating a gamified gymkhana arises from the need to establish new learning resources, since, through this playful medium, young people will be able to acquire greater knowledge and awareness of the cultural heritage of the European Union, simply by enjoying the experience we provide with our gymkhana. There will also be information on the accessibility of the same, thus generating the active participation of young people with physical disabilities or reduced mobility.

1.1 Gamification system design principles

When designing a gamification process, a series of questions must be considered related to what players like and dislike, why, what they expect to find when they enter the game, what they will or will not find interesting and what the programmer himself would want to find if he were in their place.

When choosing this pedagogical learning tool, the aforementioned aspects and the theories of Bartle and Marczewski, two great researchers in the field of video games and gamification, were taken as a starting point. Bartle establishes

that there are four different user profiles in gamification: achievers, explorers, socializers and killers. Later on, Marczewski evolves, adapts and complements his theories, creating a more complex one based on the initial predisposition of the players when it comes to playing. To this end, he established five types of users in a gamification system: players, socializers, free spirits, achievers and philanthropists. Later, Marczewski expands his spectrum to eight, taking more into account the predisposition and extrinsic motivation of the players. These three new types are networkers, exploiters and consumers.

Therefore, we have started from these eight profiles, or what was later called the main drivers of motivation or Octalysis system by Yu-kai Chou, and focused on two of them: epicness and curiosity. Thanks to the first, young people can come to feel that they are the active agents of their own learning through an immersive story in which they identify with the protagonist. All this is linked to the second factor since as the player goes through the different route points and passes the different test, he/she will become very curious about what the end of the story is, which is why he/she will continue playing and therefore learning until the end of the story.

In the same line, the creation of the gymkhana relies on some of the key factors in supporting the use of gamified learning for education and behaviour change strategies, particularly the harnessing of the power of player curiosity alluded to above. This methodology has a number of objectives such as:

- Improving student motivation.
- Increasing autonomy in decision making, reasoning and problem solving.
- Monitoring student learning.
- Activating the learning procedure: ability to experience knowledge.
- Providing useful information to the teacher about the evolution of the students.
- Encouraging creativity and imagination.
- Developing social and personal skills.
- Supporting the teaching-learning process, facilitating the acquisition of cognitive and social skills.

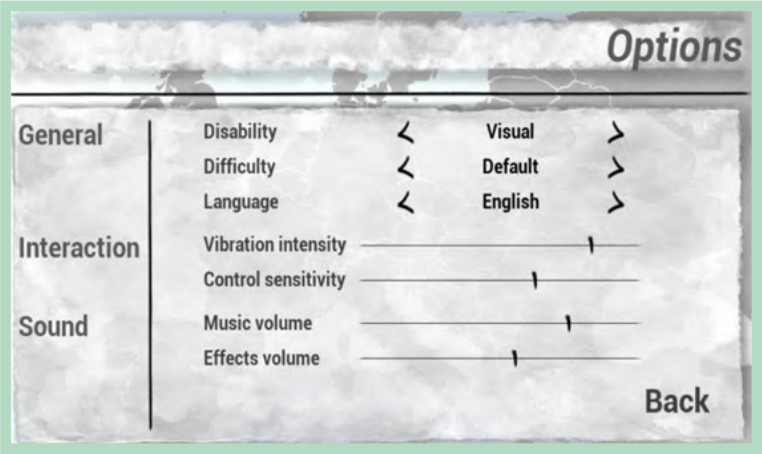
Consequently, this methodology aims to promote the use of non-formal education, demonstrating that knowledge about our cultural heritage can be expanded, thus becoming a methodological and pedagogical tool capable of motivating, enhancing and developing a heritage education, since thanks to the creation and use of the App, young people will be able to better absorb some knowledge, improve their skills or reward specific actions.

On the other hand, Gymkhana 5.0 will be addressed to all professionals working in the field of social inclusion and European culture, since the App is designed

to improve the skills of youth workers, youth technicians, workers in the field of adult education, interested organizations and institutions, NGOs, service providers, etc. with the aim of enriching activities related to their needs and producing good results in the educational, social and cultural field, promoting the inclusion of all those who lack opportunities. Also interested organizations and institutions, NGOs, tourism offices, service providers from the 5 countries involved.

Our gymkhanas methodology will be based on overcoming a series of challenges and tests through an itinerant route that will cover the most notable heritage and cultural aspects of each of the cities selected in the project. At the same time, this gamification technique will encourage personal development by promoting healthy lifestyles through games or healthy leisure.

Other characteristics of the App is that it can be adapted to four different modes, according to each type of disability: visual, hearing, physical and cognitive, in addition to having two modes of difficulty, by default and assisted. There is also an option to adapt the music volume and effects.



The App will be available in five languages: English, Spanish, Portuguese, Italian and Greek, in order to broaden the educational horizons in the different member entities of the project. The reason why these are part of this project is that each of them contributes a cultural and organizational experience and, moreover, it strengthens the strategic partnership between them through the development and dissemination of intellectual outputs and innovative work methodologies created in the field of youth and non-formal education. In addition to these specific features, each partner has a diverse network of dissemination, from youth education workers, specialists, students, public institutions and decision-makers. More concretely, it should be noted that all these cities have great historical, cultural and heritage relevance. More specifically, in the city of León, a Spanish city located in the northwest of the Iberian Peninsula, capital of the province of the same name in the autonomous community of Castilla y León.

It was born as a Roman military camp of the Legio VI Victrix (Victorious Sixth Legion) around 29 BC. C., its unique character as a country town was consolidated with the definitive settlement of the Legio VII Gemina (Seventh Legion of the Twins) from the year 74. In the year 910, one of its most outstanding historical stages began

when it became the head of the Kingdom of León, actively participating in the Reconquest against the Muslims, becoming one of the fundamental kingdoms in the configuration of the Kingdom of Spain. The city hosted the first court in the history of Europe in 1188, under the reign of Alfonso IX.

The city is not only relevant for its historical and monumental heritage and the various celebrations that take place throughout the year, such as Holy Week, but also for its situation as a mandatory stop on the Camino de Santiago, considered a World Heritage Site by the UNESCO, which makes it a city that receives a great deal of national and international tourism.

Another of the cities is Palencia, a small city in Spain, located in the north of the Iberian Peninsula, in the Autonomous Community of Castilla y León, where there are great gems of the historical and natural heritage. Some of the most prominent are “El Cristo del Otero” and “El Monte el Viejo”, places that are a little further away but well worth visiting. Palencia is one of the flattest cities in Spain, this, together with the fact that it is quite small, allows you to visit practically all its corners without using the car or resorting to public transport. In addition, it is also well adapted for people with reduced mobility.

Santa María da Feira, located a few kilometres from Porto, we can find the Feira Castle, a military fortress from the 11th century that contributed to the independence of Portugal and which dominates the city, being one of the best-preserved in Portugal. In the month of August, a great medieval fair is held, where you can witness medieval combats, troubadour bands, medieval songs to the sound of bagpipes, the aroma of gastronomy, games, theatre, crafts, etc.

This city also has a strong connection with religion, the main religious monuments being the Church and Convent of Lóios and the Church of Mercy/misericordia. The fogaça is a typical sweet also related to the religious traditions of the city. The social, cultural and industrial identity is represented in the cork sculpture of Vhils, but it is a city also marked by its popular traditions. One of the city’s ex-libris in the municipal market, a reference work by one of the most important Portuguese architects, Fernando Távora.

For its part, Palermo is located in the northwest of Sicily. The capital of Sicily has over the centuries been a crossroads of countless cultures that have enriched it with numerous monuments and symbols, which is why Palermo is developed between Arab-Norman architecture, baroque churches, neoclassical theatres and punic walls. Some of Palermo’s main monuments lie between the sacred and the profane. The Genius of Palermo, protector and cultural symbol of the city, stands out. Also, some of the most picturesque churches in Palermo. This city is a symbol of colour, dynamism and history.

Finally, we find Nicosia, the capital of Cyprus. This enclave is of great importance because it is the last divided capital of Europe, so the visitor will be able to experience a city separated in two and observe how the city evolved since obtaining this status in 1974. Another interesting fact is that all the heritage

spaces, except the Archaeological Museum, are located within the Venetian Walls (Old City).

In the following section, all those aspects related to the methodology that have been considered in the creation of Gymkhana 5.0 will be detailed and that serve for a greater knowledge of all those decisions that have been made in order to obtain a higher quality, both in the creation and in the gameplay of the App itself, and in all those adaptations necessary for greater accessibility.

2. DESIGN OF THE GYMKHANA.

Firstly, the Android platform was chosen due to the large number of Android mobile devices used in our home countries. In this sense, we can allude by omission to iOS, which was not considered because the project itself was ambitious enough, but could be taken into account as future work for a future project.

Initially, a roadmap was drawn up in which a series of limits were established, the design of the narrative, the relevant characteristics in reference to the story and the challenges that were going to be present in it were defined. Some of the limits that were established were: the maximum number of waypoints that each of the five gymkhanas could contain and the definition of what these would be. Furthermore, in relation to the estimated duration of each phase of the game, it was considered that the playable time spent per waypoint should not exceed 10 minutes, thus allowing enough free time for the “players” to explore the location on their own. and learn more about the historical and cultural heritage, outside the basic parameters of the Gymkhana that serve as a tourist attraction.

Another aspect taken into account was to define the type of players of the target group to which the project is addressed, in this case, young people from 18 and 30 years old. Also, we defined the learning goals for that target group. When trying to gamify all those relevant heritage content, we decided to include topics related to history, art history, legends, gastronomy, etc, contents.

Initially, several possible narrative structures affecting gameplay were considered. Our first approach involved a gymkhana with 5 subplots, which could be completed in any order. Each subplot would be set in a different city, in this case, the five cities to which each of the consortium partners belong. This idea had the advantage of increasing the cohesion between the sort of locations that we were going to offer in the APP, while at the same time encouraging user participation in all of them. However, given that one of the main objectives of this project is to encourage tourism in the chosen locations, we consider that it could have a negative impact to encourage travel to all the target cities. With this in mind, we proposed to create 5 independent thematic gymkhanas that could be indistinctly chosen and finished at the individual’s convenience.

2.1 Narration

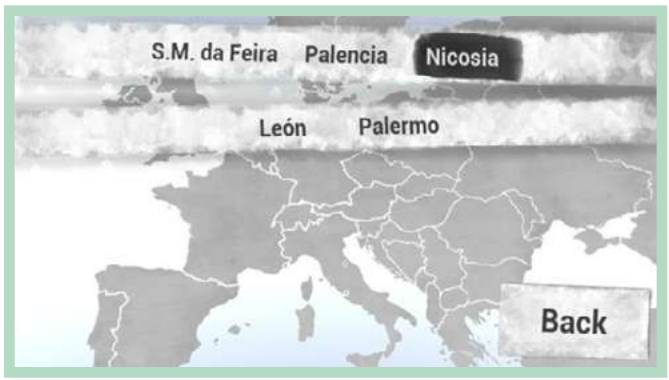
It was decided to create a common game flow format for all gymkhanas in which each of them consists of an initial story fragment or premise that poses a problem or challenge or topic thread that leads the main character to carry out an investigation in which, to solve the case, will have to solve a series of tests or puzzles at different points along the route. Every time the main character goes from one place to another, a map will appear with a blinking orange circle showing the next location where the player will have to visit.. To continue, you will need to answer yes to the following question: are you ready to continue?

It should be noted that all these puzzles cover themes related to history and will be of the same type in some cities while others will be thematic in nature: quizzes with a maximum of four tests, puzzles, selection of the correct image, riddles, multiple choice and others will be specific to each city: listening to background sounds, seven differences (Palermo), tuning a radio (Palencia), constellations, pointing out different points on the map, fuses (León), tuned radio (Palencia), etc.

Each of these tests will be adapted to the visual, hearing, physical or cognitive disability mode and its content will be converted to audio format via talkback.

When constructing the story, consideration was given to creating a short introduction, with four parallel levels (one for each location) and some of the key elements that should be present in all locations such as travel, tourist areas, public spaces, access to their mobile phones, challenges and games.

Once the structure of the story and some relevant aspects were established, five templates were created in five different languages: English, Spanish, Portuguese, Italian and Greek, since, as mentioned above, there are five languages spoken in the countries involved: Nicosia (Cyprus), Santa María da Feira (Portugal), Palermo (Italy), León and Palencia (Spain). This decision was taken in order to maintain uniformity in the content of the five stories.



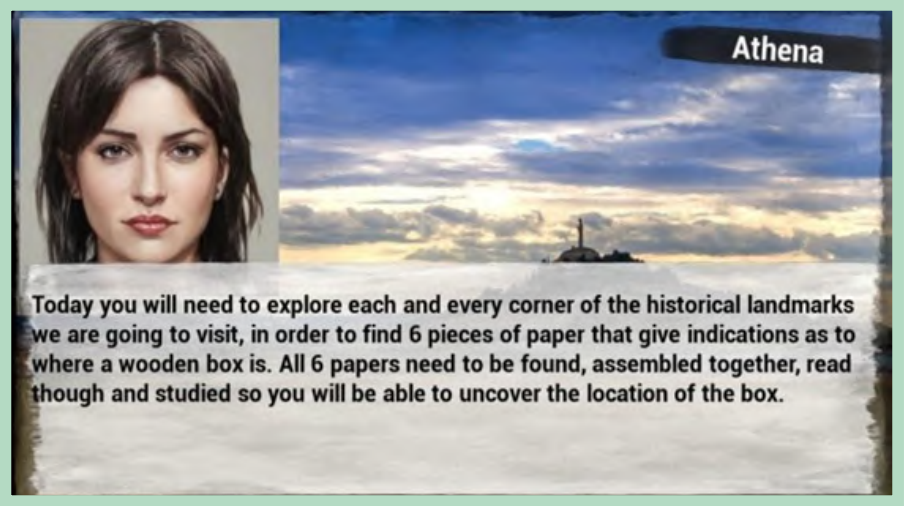
Each of the templates contains the name of the game, the city and country where the different stories take place, the date, a general description of each city, an index with the seven heritage sites where the different challenges or tests will take place and a map with the main route that will be followed throughout each city. It also details where exactly each point of the route begins, specifically the street and, specifies the means by which it can be reached, such as: on foot, by bus, etc., always taking into account those adaptations that may be necessary in every moment. Later on, each of the points began to be developed in a specific way. For this, a CC image (Creative Commons image) of the place was added and a series of questions were answered in reference to what that place is.

Also present in the template are the historical facts about the site and why it is an important place, the points of interest inside the site and more pictures related to the site, as well as some curiosities about the site, a link with more information about the site and a description of all the important points that have to do with the test or challenge of the site. Finally, there is a description of whether the site is accessible and, if not, what means would be needed to provide support for people with disabilities. Also, if there is accessibility when reaching the next location, whether on foot or by public transport.

It should be noted that this same structure is followed for each of the seven route landmarks in each country and each section consists of a maximum of words, together with the font and font size. At the same time, the number of requirements was specified for the heritage sites such as: free entry to all of them, all heritage sites and the route must be accessible (wheelchair accessible), the route must include a mix of heritage, such as tangible, intangible and natural cultural heritage and finally, the total duration of the gymkhana game must not exceed 3 hours.

Once all these points had been established, we went even deeper into the story that starts from the premise and the ideas that arise from it, since the premise itself expresses in a single sentence what the story is about. Within the story, it was specified which protagonists are chosen and what names they have, the characteristics that limit them, how they evolve throughout the story, what the relationship between reality and fiction is, what the founding principle or logic behind the story is, etc. It must be borne in mind that the protagonist is the axis around which the whole story resolves, so it was vitally important to establish all these point and to know what moral decision he will have to face at the end of the story and what is weaknesses and potentialities are in the course of the story.

In order to know how a character can evolve within a story, the following formula was taken into account: weakness x actions = change that arises in the character. This means that the character, although in the first instance has many weaknesses, will change with the different tests or challenges that arise throughout the story. Another aspect of interest regarding the character and his evolution is the conflict that arises between him and his antagonist since, between the two, an attack against the weaknesses of the other arises and it is this pressure that enables the protagonist to evolve and pass the following test. Ultimately, it is worth noting that although both have the same goal, the way in which each of the characters reaches this goal is very different on a moral level. It should be noted that all these aspects in relation to the construction of the story, have been extracted mainly from a book called “Anatomy of the script” by John Truby.



In all gymkhanas, the quizzes will have a scoring system and this will penalize wrong answers so that, each time an answer is wrong, the player returns to the initial question. In this way, the player will be able to internalize the different contents in relation to each city and all those elements that form part of its heritage.

Another fundamental aspect in introducing the player to the climate of each city, will be the different melodies that will accompany the characters and their dialogues, adapted to the different situations that occur, for example, situations of mystery, romance, uncertainty, etc.

3. DESIGN ADAPTED TO DISABILITY

Later on, it was established which elements were important for each scene and a description of each of the puzzles, together with all their possible adaptations to ensure the highest possible degree of accessibility. Some of the general adaptations that can be found in relation to the gameplay are buttons with a sufficiently large size and spacing between them, high contrast between the relevant elements presented on screen, legible font and sufficient size to make optimal use of the screen, etc.

If we refer to visual impairment, throughout the gymkhana there will be a screen reader support (talkback) that will narrate both the previously mentioned content of the template, as well as the dialogues of the different characters and the statements and options of the different tests. There will also be an option to repeat the dialogue if necessary. Also, an interface is used that relies little on the use of colors, that is, color is used as a reinforcement, not as essential information, and instead, symbols are used as the main transmitter of information. The main menu has been created in a black and white color scheme to support color blindness, especially during setup.

In addition, settings have been provided on volume control or muting for effects, voice and background or music, thus avoiding problems when listening to dialogue with respect to background sounds or special effects, since people with visual disabilities will not be reading the text.

As for the buttons, they are navigable by swiping. They are activated by double-tapping in accessibility mode and described by voice when single-tapping.

The quiz must have only 4 possible answers to each question. In this way, the player can swipe up, down, left or right to select the desired one.

Regarding the people with hearing impairement, the player can rely on the text itself or the subtitles, as the essential information, in this case, is not found in the sounds. The puzzles are replaced with text tests and a vibration has been implemented when touching the points on the screen, where a series of visual aids will also appear such as orange balls that become large and small, as is the case with the vibration (haptics) 3D maps.

Regarding to cognitive disability, a series of principles have been followed, in general lines, in which the quizzes consist of 4 answer options so that the player can slide up, down, left or right and select the desired answer for greater adaptation, since it has been avoided to have many possible answers that can

give rise to confusion. In addition, at all times it was taken into account that the questions and answers were as short and concise as possible. The number of levels in the menus is also reduced when starting the game. The language to be used will be clear, with legible font size and a clear narrative structure. Repetitive patterns will be avoided and there will be an option to repeat dialogues. Also, sound actions must be different from each other.

Regarding physical disability, the game renders in two very different modes for better accessibility: landscape and portrait. The buttons are sufficiently large and there is enough space between them. In addition, the implementation of simultaneous actions within the game mechanics has been avoided.

4. GAME INTERFACE

Within the game interface itself, there are a series of icons or buttons such as the research, information, configuration and call button for the different characters that can be helpful at any given time and add more dynamism to the story.

The research button is represented by an icon of a magnifying glass and it will be the one that will have to be clicked each time one of the puzzles has to be done. So, every time you have to do a puzzle or a test, they will come with a number attached to its name.

In the information button, represented with an icon of an “i”, all the data that is relevant to continue playing will appear, since many of these tests will have to do with that information. This will refer to the place where the main character is, the historical facts in reference to him, some information of interest and curiosities as previously specified in the template.

The call button, represented by an icon of a telephone, is used for some characters, in relation to the main character, to offer him a solution at a given moment, that is, it is a contact book, within his own mobile, that he can turn to when you don't have the resources you need on your own.

In addition, three buttons will appear, one represented with an emoticon on the options wheel, which will be used to change the general, interaction or sound options. Another button, represented with a map, is used to check where the main character is at each moment, as well as an icon represented with an arrow to exit the game to the initial menu.

Finally, it should be noted that whenever the player goes to this screen, they will find a background photo of the place where they are at that moment. This, together with the name of the location in the footer, will expand the information about their waypoint within the gymkhana. In addition, at the top of the page, there is a bar that shows at which of the seven points the player is at and how many are left to complete the gymkhana.

Later, an icon for the app was established, in which the name of the Gymkhana 5.0 App appears next to the seven route points to be followed in each of the gymkhanas in the five cities.

Afterwards, a protocol was set up to access the APP from the Play Store to carry out the first internal tests, to implement the credits.

5. TRANSLATIONS

The protocol that was defined, is that each partner writes their script in English and publishes it and that, when it is finalized, they will be in charge of notifying the rest of the entities, who have also finished it, to begin with the translations of narrations and dialogues. These are done through PO files, that is, files that contain the localization of the App in each language, since translating them by hand would be a much longer process. What this localization system does is that it outsources the translations so that they can be edited outside of the software with which the App is developed. For this, files are generated that are shared with the different partners and, each of them, is responsible for editing the translation tables into your own language. For editing, the following website is used: *https://localise.biz/free/poeditor*.

6. TESTING

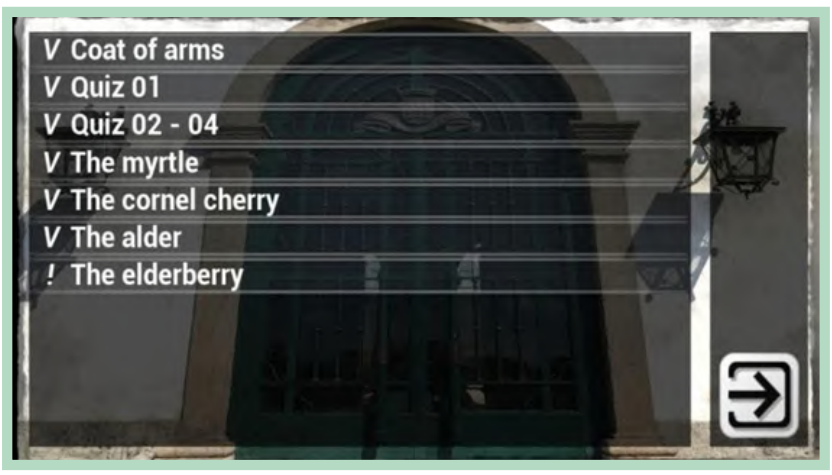
Later, each entity was in charge of doing a series of limit tests on the App. For this, everything was tested in portrait and landscape mode, alternating both modes

frequently, in the four possible orientations and with all screens and games, that is, each entity was in charge of checking if the different scripts and waypoint names were written and translated correctly, with punctuation marks, legibly, etc. Also, if the scripts got stuck or blocked at any waypoint, if the names of the characters matched the original script, if the images of all characters appear in the correct order and with their corresponding dialogue, if the maps appear in the right place and space, etc., trying to reproduce possible errors for their correction.

Afterwards, the same was done with the information previously detailed in the templates and the different tests and puzzles, where the different answer options of each of the tests were also checked, if the 3D maps follow the established sequences properly, if there was no overflow of text in the title of these, if the clues and messages were really orientative and made sense, if all the descriptions werepresent, clear and did not lead to confusion, if they had a proper animation when they appear, if they had enough size so that the player can solve them, etc.

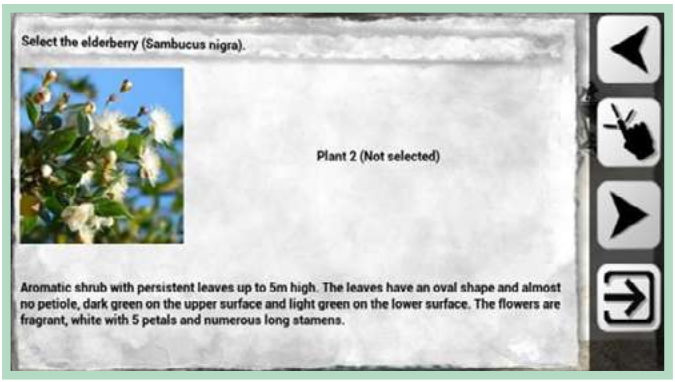
Subsequently, we started to check if all these tests and puzzles were adapted, that is, if when putting any of the four modes (visual, auditory, physical and cognitive disabilities), alternative options such as voice reading with the integrated function of the talkback voiceover, if all the hearing and haptic aids were present, if the vibration and the sound of the different puzzles are activated when trying to put the pieces or items together or in all the different points of the sheet, as it can be in the case of the constellation test. Also, if they are activated in the appropriate mode, since this should be the case in all games in which people with a visual or hearing disability have some kind of difficulty playing the game, such as clicking on a point on the maps, while the rest will go with swipe gestures. On the other hand, it was verified whether the music works in a loop, since all the musical themes are prepared so that the transition between the end of one theme and the beginning of another is as smooth and harmonic as possible. It was also checked whether the volume is appropriate for the voiceover dialogues or test descriptions.

In addition, so that the audio assets would not occupy so much, a solution was devised that consisted of using the Android voiceover that is already installed on all Android phones, since otherwise, it could take away the quality of other parts that are considered essential within the App and respond better to the objectives set in the first instance. The same process was also carried out with the assisted mode.



Next, a structure for the multi-image games was

thought, so that they have a greater structure for accessibility and that they fit well for the rest of the modalities, since people with visual disabilities need to navigate through a structure. An example would be the test of plants or musical instruments in Santa María da Feira, where the selection tests were adapted to a single image and, in this way, they are selected in sequence one by one and, in the end, you have to select all.



Later, the instant save system was implemented in the middle of the level, so that it is performed when the player hits the exit icon, taking them back to the main menu. This is represented by an emoticon with a centred arrow, as many players use their right hand and press on the screen with their thumb and can accidentally press this button with the palm of their hand. To carry out this action, the s UI (user interface) and UX (user experience) disciplines have been taken into account, as they are in charge of trying to see how an interface adapts as well as possible to the use for which it has been created based on the experience.

In addition, with regard to the scores, the word Score was put in front of them, since, in this way, the meaning of that number can be known. The Score of each country will go up when the player passes the different tests and will go down when the player fails them. Also, regarding the waypoints, it was decided to use only one colour because, by using several colours, it can lead to confusion or make believe that it has some kind of hidden meaning, like those marked in red are wrongly done.

All the aspects mentioned above are reviewed again each time a new update is carried out, since it is necessary to check if in the new publication nothing has been broken in the improvement process, if all the aspects continue to appear in the same size in both, portrait and landscape mode, if the waypoints are still visible on the maps, if all the dialogues appear or, on the contrary, they are cut off, etc.

As there came a time when the changes to be reviewed or made increased, a document with a change list was created in a Drive folder. In this way, all the aspects that must be corrected in the different games can be organized and the different partners can know how the current status of the App is. This excel contains: username, last date checked, description of the bug, version in which it was found and version in which it was fixed, name of the gymkhana, type, mode, status, notes and types.

JUSTIFICATION OF THE STORYLINE

This section of the manual contains an explanation of the following points specifically related to each of the locations selected for the Gymkhana and its game:

- Importance of the city.
- Historic value of each location and its value in the gymkhana.
- How does the story relate to it?
- Interconnection between reality and fiction
- Accessibility in relation to each place.

PALENCIA, SPAIN

The province of Palencia stands out, like the autonomous community of Castilla y León, for the large number of places of tourist interest, mainly related to rural tourism. Not in vain is it a province with more than 400 populated areas and a low population density. This leads to little pressure on the rural environment and, therefore, to a large number of rich natural landscapes, in which the human presence takes a back seat, as for example in the Palentina Mountain region, highlighting its beautiful Natural landscapes.

The province also has a rich and varied artistic heritage, as well as festivals of tourist interest. It is essential to mention the different samples of Romanesque art since here the largest number of Romanesque monuments by surface of the European continent are concentrated and the best samples of this style are found.

The Camino de Santiago runs through the province, famous both for its landscapes and for the historical heritage that surrounds it, being a UNESCO World Heritage Site.

We must also mention the Canal de Castilla, since 80% of its route passes through this province. The locks, the river port of Alar del Rey, the Palencia basin and the bicycle routes following the canal stand out.

Talking about urban tourism, we can focus on the capital, where the Gymkhana game of Palencia is based. It stands out for the quantity and quality of its Gothic and Renaissance churches, its cathedral, its emblematic bridges, the banks of the Carrión River, the multiple modernist civil buildings on Calle Mayor and the extensive green areas that make it the first per inhabitant of Spain in parks. “El Cristo del Otero”, which dominates the city, and several museums are other attractions of this unknown city for tourism.

We decided to gamify the city of Palencia due to its historical, cultural and patrimonial value. The seven route points chosen for the creation of the gymkhana are the following: Cathedral of Palencia, Puentecillas bridge, Canal

de Castilla dock, church of San Miguel, Calle Mayor and Plaza Mayor; Plaza de Abastos market and Palacio de la Diputación; and the Huerta Guadián park.

Next, we will detail the historical, cultural and patrimonial relevance that each of the city's route points have, how they are reflected and what is the interconnection between reality and fiction through legend within history, what value it adds to the gymkhana, as well as all those aspects in reference to the possible participants, such as the accessibility of each of the chosen places.

First of all, it should be noted that one of the reasons why we chose to gamify these seven route points within the city of Palencia is because of their accessibility, the route is completely flat and the total distance is 3.5 km. In addition, all the points of the route, except the Canal Dock, run through the old town of Palencia. Despite the fact that in some of its enclaves, such as the cathedral, the entrance is paid, we have carried out the tests of the game so that it is only necessary to stay outside the buildings. Taking this into account, the entire tour is completely free.

The GYMKHANA 5.0 game in the city of Palencia is based on the story of a real crime that occurred in one of the most emblematic places in the area: El Cristo del Otero, work of the famous sculptor, borned in Palencia, Victorio Macho.

True story about the crime

On November 25, 1907, a crime occurred in the hermitage of the hill of "El Cristo del Otero". At that time the hermitage was guarded by the 52-year-old hermit Mariano Rey del Río. Isabel Arroyo Pérez, the hermit's maid, aged 72, described what had happened there previously that day: Four men known by the nicknames of "El Moraíta", "El Chivero", "El Chato" and "El Quinquillero" entered the hermitage that night knocking on the door, asking for a glass of water and when they opened them, the four men attacked the hermit and his maid for the purpose of stealing: The maid having been tied up got to see how the four men tied up the hermit and began to beat and torture him in order to get a confession as to where the tithe money was. Such was the cruelty they used that they were able to dine while the hermit, very badly wounded, died by their side.

The hermit's corpse was found with stab wounds, burns, symptoms of suffocation and signs that indicated that he had been beaten, while the thieves had fled with a loot of 1.200 pesetas.

With this terrible story as a reference, taking numerous creative licenses to make the game more interesting, we have developed the gymkhana of Palencia, in which the player participates in the first person as the crime investigator and, thanks to his assistant, they go through points of cultural interest of the city, which coincide with those of interest also to solve the murder mystery and find out who the murderer is.

EL CRIMEN DE OTERO

Convictos y confesos

Dicen de Palencia que convictos y confesos del horrible asesinato perpetrado en la persona del desgraciado ermitaño del Cristo, han ingresado en la cárcel de aquella ciudad los criminales Mariano Monzón, vecino de Dueñas y Gervasio Abia Brizuela, de Palencia, conocidos por el sobrenombre de *Chivero* y *Moraito*, respectivamente.

Visten chaqueta y pantalón de pana color café, y boina.

Continúan las pesquisas para buscar á los demás autores del asesinato.

En Calabazanos—al ser conducidos á Palencia—los capturados fueron careados con la procesada Isabel Arroyo, á la cual se condujo en una burra desde la cárcel.

Isabel manifestó que las señas coincidían con los bárbaros autores del crimen.

El Sr. Millán Astray ha hecho declaraciones sincerándose de los cargos que le hizo un colega.

Ha dicho que sabía que los capturados que se escaparon al ser conducidos eran los matadores del ermitaño.

Publication of the crime in the newspaper "El País" on December 26, 1907

SERVICIOS DE LA GUARDIA CIVIL

En Almazán ha sido detenido en un corral próximo al pueblo, por el sargento Castrillo, del puesto de la Guardia civil de Frechilla (Palencia), un sujeto que dijo llamarse Santos Pollado Sanz (a) *el Quinquillero*, á quien venían persiguiendo el referido sargento y otro número de la Benemérita, desde la noche del 24 ó 25 de Noviembre próximo pasado, por las provincias de Valladolid y Segovia, como uno de los autores del robo y asesinato de Mariano Rey, ermitaño del Cristo del Otero, en las cercanías de Palencia, en la noche citada del 24 de Noviembre.

También la Guardia civil ha logrado detener en otra población cercana á Valladolid á Federico Sánchez Redondo (a) *el Chato*.

Ambos individuos, juntamente con Mariano Monzón de la Rúa, *el Moraita*, y Gervasio Avia Brizuela, *el Chivero*, detenidos recientemente, también por la Guardia civil; fueron los cuatro asesinos del ermitaño.

Publication of the arrest of "El Quinquillero" in the independent newspaper "El Día" on Monday, January 20, 1908

The first point of the route is the Cathedral called "The Unknown Beauty", it is a temple of Catholic worship characterized by the plurality of styles, among which the Gothic and Renaissance elements stand out. It has important works of painting and sculpture. The current Gothic building was built on the old Cathedral, in the Romanesque style.

In its basement is the "Crypt of San Antolín", the oldest part of the Cathedral where, according to tradition, the remains of the martyr San Antolín rest. It is located at the lowest point of the entire building. It is a Visigothic remnant from the second half of the 7th century. Currently it is a tradition to take its waters on September 2, the day of Saint Antolin, patron saint of the city.

The first stone of the current building was laid in 1321 but the oldest part of the Crypt of San Antolín dates from the 7th century, built with and on Roman remains.

It is the third largest cathedral in Spain. In addition to the Visigothic, Romanesque and Gothic architectural styles, it has Renaissance, Baroque and Neoclassical decorative elements.

The plan of the Cathedral is of Latin cross, as a peculiarity it has a double transept, so it has five doors, forming a plan in the shape of a patriarchal cross. Inside there are more than 20 chapels.

The last part of the cathedral built, the Chapter House and the cloister, were built in the 16th century, nowadays they house the Cathedral Museum.

The exterior of the cathedral is characterized by its sobriety and nudity, only broken by the richness of some of the covers and the volumetric play of the apse.

A curiosity of this cathedral is the two figures of opposing aliens crowning the outer archivolt above the “de los Reyes o de San Juan” door. In 1995 a project was planned to restore this cover. This type of intervention must be done according to the existing door, its decoration and the Heritage regulations. The volumes were restored with artificial stone and the entire sculptural ensemble was reinterpreted so that both its iconography and its invoice, the expert could identify that it belongs to a later restoration.

The oldest part of the cathedral is the head, which follows the patterns of the classic Gothic style. Strange gargoyles appear among the pinnacles; they are based, as was the custom in the Gothic, on themes related to death, hell and phantasmagorical beings.

Among the gargoyles one stands out: the photographer. In the 19th century Jerónimo Arroyo, a local architect who restored the Cathedral, decided to place it in honor of a friend who died taking photos on the roof of the cathedral. Next to

this gargoyle there is another one that represents the death of the photographer: a skeleton. This is why the test in this location asks the player to find this curious gargoyle.

The next point of the route is an old stone bridge, of Roman origin, that crosses the Carrión river and connects the city with the “Sotillo de los Canónigos” park.

“Puentecillas” constitutes one of the urban elements with the greatest personality in the city, and was a key factor in the urban development of the area. It is located in a monumental environment of great interest, along with representative monuments of the city that we also go through within Gymkhana 5.0.

The question in this location is about the “Bolus of Patience”, at the entrance of the bridge, that was for years, the city’s gossip mill. Not many people know about the origin of this big stone, gossip mills were points in the cities where people, regardless of their social class, got together to talk, share gossip and exchange information.

Crossing the Carrión river we will arrive at the next location, La Dársena del Canal de Castilla. The Canal de Castilla constitutes one of the most important civil engineering works of the 18th century and the first third of the 19th century. The Canal runs along 207 km. It was a huge infrastructure at the time, that aimed to improve the transportation of cereal from Castilla to the Cantabric coast. This is relevant information about the history of Castilla y León, and makes the test players have to answer correctly in this location.

The channel reaches Palencia through the South branch and ends in a dock that served to facilitate the loading and unloading of barges at the time.

The banks of the canal and the dock are perfect to explore by bike, horseback or simply on foot, allowing you to enjoy its flora, fauna and all its architectural elements.

We have to cross back the river, arriving at San Miguel Square, where San Miguel's church is located. With the appearance of a fortress, it is one of the most emblematic monuments of Palencia.

Its original openwork tower of transition to the Gothic, of a religious and military nature, has been restored eliminating the reinforcements that were placed to correct the damage caused by the Lisbon earthquake in 1755. The most representative part of this church is its tower, about 70 meters high from the ground, it looks like a castle-fortress, its defensive character was due to its importance as a place of surveillance as it used to be one of the tallest buildings in Palencia.

The windows, that are small in size, already have coloured glass, a pre-announcement of the large Gothic stained glass windows that would come later. This interesting mix of styles gives us the next question, where the player has to differentiate between Romanesque and Gothic style, finding what part of the church is not related to any of those, which is the defensive tower.

To arrive at the next location, the Main Square, the route will go through Mayor Street, which is the commercial nerve centre of the city, with a length of almost one kilometre. On one of its sides it preserves arcades and along it there are very representative buildings of Palencia.

To keep playing and finding the suspects of the story, the player has to walk this street going through some of its main points of interest that are the following:

The first thing we come across on our tour is the statue of the “Mujer Palentina”, this is a work of Indalecio López, sculpted in black stone on a granite base. It is popularly known as “la Gorda” (the fat woman). Although at first its location was somewhat controversial for being a too modern statue for the environment, little by little it became the quintessential meeting point in the city.

The Casino, a select and cultural recreation circle of the Palentine bourgeoisie, is the only building on this side of the street that preserves the arcade and on its exterior facade you can see a modernist mural made by the Palentine artist Rafael Oliva in 1998.

A little further on, we can see the Colegio de Villandrando, work of Jerónimo Arroyo in 1911, in a floral modernist style with neo-Gothic, neo-romantic and secessionist elements. It consists of three floors; the lower one with an arcade formed by four arches on five hexagonal shaft columns, with capitals decorated with the Villandrando coats of arms on the sides and allegories of the three theological virtues in the central ones. On the second floor there are four wrought iron balconies topped with arches framed in pinnacles that contain floral decoration, the last floor features twin windows with mainel and helical shaft pilasters, highlighting at the top the cornice that has a ceramic frieze glazed by Daniel de Zuloaga, that represents its founder the Viscountess of Villandrando. In 1998 the building was declared a Site of Cultural Interest.

Lastly, arriving at the Main Square, Palencia’s civic and commercial place, dating from the 16th century, in which you can find the City Hall, a neoclassical building that was inaugurated in 1878 and whose construction lasted 20 years, last point of interest where the last suspect is hidden within the game.

The square is surrounded by arcades on three of its four sides, of perfect symmetry. In the centre, it is adorned by a 4-meter black and white (stone and bronze) monument sculpted by Victorio Macho, dedicated to Alonso Berruguete. This work was commissioned on the occasion of the fourth centenary of the sculptor's death. The stone part, representing a giant flame, outlines several of the sculptor's works and the head of "Cristo del Otero", a license from the author. In bronze we find the sculpture of Alonso Berruguete, with a height of 2.30 meters.

Nearby the gymkhana continues in the Supply Market, a protected historic building that is 121 years old and underwent a remodel in 1982 with a rectangular plan of iron and glass. Stalls were arranged in an orderly manner to create a food market. Previously, this market was held outdoors in the city's Main Square. On the outside, its tiles stand out, some representing market trades, interspersed with tiles that contain the coat of arms of Palencia. Here you can find fresh goods all year round, among them, some of the delicious ingredients to make typical regional dishes. In this part of the game the player will learn some of those answering the question related to the market.

Right next to the market, stands the Palace of the Provincial Council. The inauguration of this Neoplateresque building with Baroque influences took place in 1914, under the direction of the architect Jerónimo Arroyo, who was born in Palencia. Inside it houses different murals and paintings created by artists from Palencia, such as Asterio Mañanós, Eugenio Oliva, Casado del Alisal, Pedro Mozos and Victorio Macho.

In the lobby we can see frescoes and Italian-looking tapestries, if we look at the ceiling we find a wonderful canvas with the theme of the city's defence by the Vacceos, work of Eugenio Oliva.

This palace suffered a fire in 1966 that affected, above all, the upper floor of the building. The fire destroyed much of the documentation stored there, in addition to works of art. In this fateful event, Gaspar Arroyo died, who was at that time the head of the fire brigade. Gaspar Arroyo was Jerónimo Arroyo's son, the architect, born in Palencia, who designed this building, a construction that was surely his masterpiece.

A little bit further away the last location of the gymkhana is the Huerta Guadián Park with its San Juan Bautista's Church. This romantic style park, located in the city centre, is one of the largest with almost two hectares in size, loaded with abundant and rich vegetation.

It is necessary to allude in this park to the sculptural works that decorate it, to highlight the abstract wooden sculptures in front of the main entrance that were made from diseased trees.

At the bottom of the park where it borders the railway line, if it is not known is difficult to see, because it is almost hidden by the trees, there is the sundial, with its Ionic columns and its Roman numerals at the foot of each column, the central column rotates at its top and casts a shadow that shows the hours.

Inside the Park we find the Church of San Juan Bautista, its initial location was in Villanueva del Rio Pisuerga, a town that was flooded when the Aguilar de Campoo's reservoir was built, for its reconstruction in 1955 and for 8 years they moved it from its initial location to Palencia stone by stone (all of them numbered), in 1981 it was declared an artistic historical monument.

It is a 12th century Romanesque church of small size with one single nave, on the doorway we can see six archivolts supported by columns, on the facade we can see the representation of the original sin with Adam and Eve flanking the tree of paradise in which a snake coils. An allegory of lust also completes the vegetable decoration of the facade, and to finish under the cornice there are human and animal figures.

Taking into account all those points of interest within the park, the quiz in this location makes the player move around and get to see them all, so they can find where the last hint is to finish the game and find who the murderer is.

Today this park is often used as an "exhibition hall" in the open air and as a stage for classical festivals at the festivities of San Antolín, patron saint of the city.

LEÓN, SPAIN

One of the five cities that was decided to gamify is León. A series of criteria were taken into account when choosing this city and the different route points of the gymkhana, such as: its great historical, cultural and heritage value, whether the different monuments/landmarks are accessible and free, if the distance from one place to the next, within the itinerary, is feasible, etc. These criteria are of vital importance since the aim of this project is that the target group, in this case young people between 18 and 30 years of age, internalise a series of knowledge in reference to the heritage of five cities through a innovative methodology.

Accessibility criteria have been taken into account at all times, since it is an inclusive app. For this purpose, accessible and free places have been chosen, which as a whole have continuity and there is not a long walking distance between them. The seven route points chosen for the creation of the gymkhana were the following: León Cathedral, the Palacios de los Guzmanes, the Basilica of San Isidoro, the Monastery of San Marcos, the Palacio del Conde Luna, the Barrio Húmedo and the Plaza del Grano.

In the first instance it should be noted that one of the reasons why we chose to gamify these seven waypoints within the city of León is because of their accessibility, since the route is mostly flat and the total distance is approximately 3.6 km. In addition, all the points along the route, except for the visit to the Convent of San Marcos, run through the old town of León, so it is only possible to do the route on foot, as the streets are specifically designed for pedestrians. It is also possible to go from the Basilica of San Isidoro to the Convent of San Marcos by bus at a cost of € 1.20 (regular ticket).

The starting point of the gymkhana is the Cathedral of Santa María de Regla de León, located in the historic centre of the city and with access to several streets, all of them pedestrianized. This first point is no coincidence, as the Cathedral of León is one of the most important and significant points of the city, visited annually by thousands of tourists. One of the main reasons for its interest is that it is a temple of Catholic worship, with the episcopal seat of the diocese of León and begun in the 18th century by the master Enrique, who was replaced by the Spanish Juan Pérez on his death, with the support of King Alfonso X of Castile.

The cathedral is one of the major references of the Gothic style in Spain, with French influence, as it took the “dematerialization” of this art to the extreme, reducing the walls to their minimum expression to be replaced by stained glass windows and thus constituting one of the largest and most important sets of medieval stained glass windows in the world, specifically 737. This work is known by the nickname of Pulchra leonina, which means ‘Beautiful Leonine’ and is located on the Pilgrim’s Way to Santiago de Compostela.

This construction site is home to a legend known as “The legend of the evil mole.” According to this legend, the mole destroyed at night everything that was being built during the day in the early stages of construction. This caused the people of León to become impatient with the progress of the work, since it was not moving forward and they decided to put an end to the life of this evil being. In memory of this fact and, in gratitude to the Virgin Mary, owner of the temple, the animal’s skin was hung inside the cathedral, above the aforementioned door, on the west facade.

The reality behind the legend is that the works on the Cathedral of León encountered numerous foundation problems, in a very unstable terrain which, by then, had housed many different constructions. For its part, what we can see today, in the twilight, above the door of the cathedral proved, during the 1990s, to be, in reality, a shell of a lute turtle, whose origin is still uncertain, although it was supposed to be an offering, made by some man of power to the cathedral and inserting such an element in the ancient tradition (key in the constitution of numerous museums) of collecting Antiquities and Rarities.

History and legend intermingle when Tristán, the main character and supposed student of a Master’s Degree in Ancient Spanish History, has to solve a case proposed by his uncle Horacio, head of the cathedral’s security. The whole plot begins when Horacio informs his nephew that an article belonging to the cathedral has disappeared, which is not cataloged in the museum and forms part of what is called “the key of the four”, since, by putting these four pieces together, a lost relic hidden somewhere in León can be found. From this moment on, everything will revolve around this event, as Tristán will have to obtain the remaining fragments before the thief does, or else his uncle will lose his job.

In order for the protagonist to find the lost relic, he will have to carry out a thorough investigation and answer a series of quizzes on different contents related to historical events or heritage and cultural aspects of each of the points chosen for the gymkhana in the city of León. These contents will not only deal with real facts but, on more than one occasion, will be intermingled with fiction and legends that have accompanied human being since the beginning of time. The legend of the evil is a clear example of this, since the moment when it becomes visible in the story is when Tristán asks his uncle where to start investigating and he replies that they have photographic material of the stolen piece, as well as a large number of digitized documents related to the history of León. When Tristán accesses the information, he finds a document on which the legend is written and a photograph showing a turtle sculpted on one of the pieces. This information will be necessary to pass the next test and obtain clues, such as, in this case, a clue to the true story about the legend: the mole is actually the shell of a turtle.

At this point, the protagonist deduces that the rest of the fragments could have more animals associated and this leads him to another document in reference to the cathedral of León, as it was believed that it housed, underneath itself,

a kind of tunnels, known as the six-headed serpent, which connected it to six other enclaves in the city. These tunnels are said to have been used by a branch of ancient Knights Templar for their secret meetings and for the transport of Christianity relics. It is here that legend and reality are once again interconnected, as legend has it that a gigantic snake still lives inside it and devours anyone who dares to enter one of the six corridors.

When Tristán learns this information, he asks his uncle if there is anything related to this animal in the city of León, so he decides to investigate heraldry and discovers that, in the coat of arms of the Guzmanes family, there is a basket full of vipers. This fact interconnects history and legend, since this coat represents one of the oldest families in León and tells us about their palace, which is preserved as one of the most important museums in the city: the Palace of the Guzmanes or the Palacio de los Guzmanes?

Regarding the accessibility of this point in history, it is worth highlighting the fact that the cathedral is located in the highest part of the area, making the rest of the route flat and therefore accessible to young people with physical disabilities, in wheelchairs or with reduced mobility. Admission to the cathedral will be 6 Euros for individual, 5 Euros for groups, senior citizens and students, and free for people with disabilities. Although admission to this work is not free in general, we consider this place to be an essential part of the itinerary, since the facade of the cathedral alone is, in itself, sufficiently valuable.

In terms of accessibility, it has ramps and accesses inside and a plan and elevation at the entrance, with a brief explanatory text in Braille.

The second point of the gymkhana is the Guzmanes Palace. We have decided to choose this work because it is a well-known Renaissance palace from the 16th century, which is located in the Plaza de San Marcelo, next to the Casa Botines. It is the work of master builder Rodrigo Gil de Hontañón, although Juan de Ribero Rada was in charge of its execution. Despite being unfinished, it became the most outstanding palace in the city.

It was ordered to be built by Ramiro Núñez de Guzmán, a former member and member of one of the oldest lineages in León. In 1566 the main facade was built in front of the current Plaza de San Marcelo. At the end of the 16th century, work was interrupted and the palace was left incomplete. Later, in 1881, the Diputación de León bought the building from the owners of the time, the Counts of Peñaranda de Bracamonte.

At this point, Tristán decides to practice some contents about art, which may be useful to him, in reference to the existing styles of columns according to their complexity (Doric, Ionic and Corinthian) and to know which of them stands out on the facade of the palace of Los Guzmanes, as well as having to arrange the different artistic styles in chronological order (Romanesque, Gothic, Mudejar, Renaissance). This is of vital importance, since what stands out most in the Palacio de los Guzmanes, is its main facade, where you can see a decorated door from the 16th century, flanked by Ionic columns and crowned with the statues of two soldiers with the family coat of arms. ON the first floor there are stained-glass windows and on the second floor and on the third floor there is a gallery of glass arches separated by Corinthian pilasters. The south tower contains Doric, Ionic and Corinthian columns.

After getting them right, Tristán asks the manager of the place if she could provide him with more information and, at this point, he discovers the existence of a rooster-velet in San Isidoro. This fact connects the Guzmanes Palace with the next waypoint: the Basilica of San Isidoro and also, at this point in the story, the player would already know three of the four animals.

Regarding accessibility, it should be noted that admission will be free and that it will be open from Monday to Friday, from 9:00 to 14:30 and from 16:30 to 18:30 hours in winter and from July to September. every day, from 10:00 to 14:00 hours and from 16:00 to 20:00 hours.

The third point we have chosen is La Real Colegiata Basílica de San Isidoro or, simply, San Isidoro de León, a Christian temple located in this city. It is one of the most outstanding Romanesque architectural ensembles in Spain, due to its history, architecture, sculpture and the sumptuary Romanesque objects that have been preserved. It has the particularity of having a Royal Pantheon located at the foot of the church, with Romanesque mural painting and original capitals, all of which makes it a unique piece of the Romanesque world of the period. The complex was built and extended during the 11th and 12th centuries and was originally a monastery dedicated to San Pelayo.

The Pantheon and the two gates on its south facade, known as the Lamb Gate and the Forgiveness Gate, plus the North or Chapterhouse Gate, are the first manifestations of Romanesque art in León. Over time, Gothic, Renaissance, and Baroque modifications and additions were made.

At this point in the route, the evidence is oriented towards the grail and the rooster-veleta since, the manager, offers Tristán a document about the Holy Grail and he asks him a series of questions about how it arrived in León, what it is made of, who the jewels belonged to, and also questions about the origin of the rooster-veleta, to which century it belongs, what it is made of and where it is now. After finding out the answers, the protagonist tries to find out if the rooster-velvet has an inscription and a drawing of an animal on it, but the manager informs him that it is no longer in San Isidoro and that it has been transferred to the Monastery of San Marcos.

This part connects with the real history of San Isidoro since, in the tower of this place, was located the rooster-veleta, which was, for centuries, the most precious symbol of the city of León. In the 21st century, when the tower was extensively restored, this piece was dismantled for cleaning purposes and a copy was left in its place.

The fourth point of the route, which Tristán visits, is the Monastery of San Marcos, one of the great architectural jewels of the Spanish city of León, along with the cathedral, the Basilica of San Isidoro and the Casa Botines. It is now a tourist hostel as well as a consecrated church and was formerly the Museum of León, one of the most important monuments of the Spanish Renaissance. The interior of the museum is divided into three rooms: the chapterhouse, the choir and the cloister.

The origins of this building date back to the 12th century as a refuge for pilgrims on their way to Santiago de Compostela. Its facade is a pearl of the Plateresque artistic style and is made up of a single canvas with a two-part, two-storey wall, topped with an openwork coat of arms and candelabra.

Here, Tristan wants to apply for the job of security guard. To check whether he is a suitable candidate for the job, the manager sends a survey to his phone about the style of the monastery's facade (Romanesque, Proto-Renaissance (Plateresque), Gothic or Rococo). As well as the origin of the building, how many rooms the museum is divided into and who was the famous writer imprisoned in San Marcos. Just then, the thief steals a document and, in trying to escape the pursuit of Tristán and a policeman, loses it. When Tristán opens it to see what it is about, he finds a writing that talks about an order and a warning: he cannot reveal what is hidden in the chamber, leaving some clues about the importance of touching the document and about the guide of the stars when he is lost

This is of vital importance as, in this test, the player must touch different points on the screen until he finds the pattern of the constellation of the Chariot. At this point, Tristán calls his uncle asking for a 300 year old map and he tells him that he thinks there is one in the Conde Luna palace/Count Luna's palace.

With regard to accessibility, it should be noted that admission will have a regular price of 0.6 Euros and that it will be free for students, retired persons, children under 18 years of age and on all Saturdays and Sundays. Winter opening hours (October to June) will be from Tuesday to Saturday, from 10:00 to 14:00 and from 16:00 to 19:00 and summer opening hours (July to September), from Tuesday to Saturday, from 10:00 to 14:00 and from 17:00 to 20:00. On Sundays and public holidays it is from 10:00 to 14:00.

The Palacio de Conde Luna is the fifth point of the route, it is a monument located in the southwest corner of the old Roman wall of the city of León. The central body of the facade of this old 14th century palace is preserved. It was built by Pedro Sánchez de Quiñones and his wife Juana González de Bazán, with coats of arms, the central one of the Quiñones and the side ones related to the Bazán family. It is built in ashlar stone and is about eleven meters wide. The doorway is Gothic with a lintel over modillions, a large pointed arch covers the tympanum and is framed by a wide molding. In 1931 it was declared a National Historic Monument.

Tristan enters the palace and looks at the map. At this point, the player will have to mark each and every one of the points that he has previously visited: the cathedral, the palace of the Guzmanes, the Basilica of San Isidoro, the monastery of San Marcos and Count Luna. An interesting detail is that, by joining all these hidden dots with invisible ink, the player will again come across the constellation of the Chariot that previously appeared in the document found in San Marcos.

At this point, the protagonist deduces that his next target could be located in the Barrio Húmedo and, just at that moment, an unknown woman appears before him and gives him a series of coordinates, the first of which is to go to the bar La Bicha, located in this well-known neighborhood of León.

Admission to the palace will be free of charge and the opening hours will be Monday to Wednesday from 9:00 to 21:00 and Tuesdays from 9:00 to 14:00.

The sixth point on the route is León Barrio Húmedo. This is a historic quarter, located in the heart of the city of León, as it exemplifies how the city was laid out in medieval times: narrow streets, irregular blocks, high density, narrow and deep buildings with vertical openings, balconies, bay windows, wooden eaves, etc. The vast majority of the city's monuments are located here.

The Barrio Húmedo is undoubtedly the best known and busiest area of the old quarter of León, located to the south of Calle Ancha. Its origins probably lie in the old Roman cannaba, where the civilians who supplied with products lived. Among its most emblematic streets we can find the Rúa, which was once the most commercial street in the city, connecting the Calle Ancha with Plaza de San Francisco, outside the walled enclosure.

On the other hand, the life of the neighborhood is concentrated in the streets around the Plaza de San Martín and the Plaza Mayor, where most of the hotels, nightclubs and leisure facilities are located. This is another reasons why it was decided to gamify this area, since, at this point of the route, we wanted to offer a certain variety in terms of heritage content, capturing, through this well-known neighborhood, the most typical social and gastronomic culture of the area, in this case, the provincial gastronomy of León through its well-known tapas, which, being totally free, accompany the drink.

When Tristán arrives at the bar La Bicha, the stranger proposes to play a game in which, for everything to go well, he must follow a series of instructions. The first is to order something at the bar. In this case, Tristán, chooses to order a cocido maragato, a typical dish in the gastronomy of León. This is also characterized by the fact that it consist of a specific order: meat, chickpeas and soup.

Later, he asks him to order three typical tapas from León: blood pudding, botillo and the previously mentioned stew. The fun of the question lies in the fact that the protagonist will have to choose the answer to the dish that does not belong to the area of León, which in this case being, in this case is asparagus from Tudela.

The next places he sends Tristán are: the Mesón Jabugo, the bar El Rebote, known for its multi-flavoured croquettes and the bar El Barro.

All these bars, taverns, restaurants and inns are typical of the Barrio Húmedo and, in them, you can find the characteristic dishes of the place such as those mentioned above, as well as to some others such as cecina de León, the cod garlicarriero, the soup of trout and sweets from Astorga (municipality belonging to León) such as: mantecadas, puff pastries, chocolates, etc.

The last point is the Plaza Grano, which is a square located in the old town of León. Although it is popularly known as Plaza del Grano, its official name is Plaza de Santa María del Camino, as it is located behind the church of the same name. One of the characteristics that make this square a landmark is that it has a cobblestone typical of medieval León, although this stamp was the same as in countless public spaces in the capital, this is the only one that has survived in the 21st century.

Its present name derives from the markets where grains and other agricultural products were sold. Although attempts have been made to make modifications to it, all were rejected because of its great character and the historical memories it contains, since it has been argued that it should be preserved without any addition that might disfigure its initial characteristics.

All these historical and cultural reasons were taken into account when choosing this place as the final outcome of the story when, Tristán discoverers through his uncle's own words that the fragment of the cathedral was never stolen and that it was only a pretext for him to help him find the three remaining fragments. The thief was also fictitious, as his uncle kept sending him the necessary information so that he would always one step ahead of his nephew.

Through a poem and a map, which alludes to looking behind the cross, the protagonist deduces that, behind the cross, the church is located and, thanks to this, he manages to put the four pieces together and open the camera. On the other hand, this poem gives rise to reflection on the characteristic elements that make up the Plaza Grano.

Likewise, each of the pieces is engraved with one of the animals that have formed part of the history and ancient legends, such as: the tortoise, the rooster, the snake and the lion, symbol of the city and, in the middle of all of them, the templar cross. This cross, symbol of the Knights Templar who belonged to the Order of the Temple, is not part of history by chance either, but rather the city of León reflects a certain Templar tradition.

PALERMO, ITALY

The city of Palermo is the capital of the region of Sicily, one of the largest islands in the Mediterranean belonging to the Italian territory.

Since ancient times, Sicily has been the crossroads of many different cultures that have influenced over the centuries culture, customs, architectural and artistic styles.

The city of Palermo is an example of this with its many different styles and especially today, thanks to the variety of cultures that the city welcomes, it embodies the concept of “diversity is equality”.

The Gymkhana 5.0 project has therefore involved CEIPES precisely because of the possibility of carrying out the project activities in the city of Palermo. The historical, cultural, and patrimonial heritage was considered, as well as the possibility of involving the target group of the project, that is, disadvantaged young people. Young people will be able to take advantage of the free and accessible path developed by Gymkhana, that will take them to visit some of the most symbolic places of the city of Palermo, representing both the sacred and the profane. Young people will also receive information both historical and related to the cultural and religious mythology of the city.

The design of the route in the city of Palermo was based firstly on the accessibility of each place included in the path because the app was created as a tool for inclusive knowledge. For this purpose, the path included some places accessible by special tools or for the characteristics of the place itself as well as accessible on foot thanks to the short distance between places or using sustainable means that the city of Palermo itself offers.

The seven points of the route chosen are the following: Villa Giulia; Church of Santa Maria dello Spasimo and adjacent Piazza Magione; Piazza rivoluzione; Vucciria Market; Piazza Quattro Canti with adjacent Piazza Pretoria; Church of San Giuseppe dei Teatini and Palermo Cathedral.

The total distance between the various places makes the route of 2.7 km; the path is mostly flat, and the conformation of the places makes them automatically accessible. You can walk the route on foot (recommended) or by eco-friendly means such as electric scooters or buses. For some years, the municipality of Palermo has been giving citizens and visitors the opportunity to use scooters, suitable also for people with motor disabilities. The bus that passes through the historic center is usually free but in case you must pay the ticket costs 1.40 euros.

As previously mentioned, the route includes many symbolic places that tell the story of the city of Palermo in many of its facets; that’s why the route gets to the heart of the historic center, from Villa Giulia which is one of the oldest villas built in Palermo to the Cathedral, one of the symbols of the Arab-Norman route of Palermo, confirming the multiplicity of its styles.

Villa Giulia is located just outside the ancient city walls. It was built in 1777 and represents one of the first public gardens in Italy. The villa was built by the architect Nicolò Palma on behalf of the freemason Viceroy of Sicily Marcantonio Colonna Prince of Aliano and Stigliano; that's why it contains many Masonic references from its perfectly square plan divided into 8 sectors (reference to the Templars) with geometric figures such as the square (Masonic reference to indicate the 4 elements) the circle (in memory of the circular movement), the pentagon (sacred figure) and the triangle (symbol of perfection).

The garden is accessible to all, free of charge and the natural conformation of the place makes it suitable for the reception of people with disabilities.

Inside Villa Giulia there are numerous marble sculptures, of which the most significant is that of the Genius of Palermo made by Ignazio Marabitti in 1778.

The Genius, tutelary deity, cultural protector of Palermo and personification of the city indicates the magnificence and the virtue of the city; at Villa Giulia, it is accompanied by esoteric elements such as the cornucopia, the pomegranates, the eagle, the crown, the snake, the dog, and the shells. The representative aspect of the statue itself is the figure of the serpent which embodies the concept of the statue and is constantly found in other representations scattered throughout the city. The Genius of Villa Giulia is one of the 7 sculptures, now 8 (the eighth was inaugurated in 2020) present in the city.

The history of the Genius has its origins in the pre-Roman era, but there is no certain history that does not detach itself from the legend and can give us certainties regarding the interpretation of its symbols. According to the myths handed down by Ovid in the first century BC it symbolized the genius loci

(tutelary deity of the city). This meaning is found in the interpretation of Vincenzo di Giovanni in which the bearded man is Palermo itself while the snake is Scipio Africanus who was supported and helped by the people of Palermo in the war against Hannibal's Carthaginians. As a sign of gratitude, Scipio would have donated to the city a golden basin with at the centre a statue of a warrior who fed a snake from his chest. In the representations of the genius, it is recurrent an inscription in Latin "Panormus conca aurea suos devorat alienos nutrit" (Palermo conca d'oro devours its own and feeds the foreigners).

The archetype of the snake nourished by the Genius indicates the renewal of the city and its relationships with foreigners that during the city's history, between passages and conquests, produced in Palermo and in Sicily traffics, exchanges, rearranging and cultural transformations. This only confirms how Palermo has conquered over the years the name of city of welcoming. It is the belief of the city, which transforms itself thanks to the different influences over time, that whoever arrives in Palermo should be welcomed, respected, and integrated as a member of the community and as a human being.

In the Gymkhana path, we will discover more about the Genius of Palermo, thanks to him telling us about himself and the city as a narrator. After a long time, the Genius will return to Palermo to see how it has changed over the centuries; with him, we will have the opportunity to take a journey between the past and the present. We wanted to consider this figure as a narrator because being the personification of the city he can tell the details through his own story transporting us directly through the streets of Palermo and welcoming those who want to know the history of this wonderful city. Using creativity, we have told the story of the Genius once again, of course referring to historical references but taking the artistic license to imagine the Genius as a warrior who personally supported Scipio Africanus in the war against the Carthaginians. Therefore, the Genius represents a red thread that connects each place, giving us the opportunity to discover the numerous aspects of the city of Palermo and the various characters associated to the history of the places. For example, at Villa Giulia we can find the poet Goethe who visited Sicily in 1787. The poet defined Villa Giulia "the most beautiful corner of the earth" and he was fascinated by it.

In the game, the Genius will return to Palermo as a narrator to tell the story of the city and to tell his own story; furthermore, as the player visits the city new details will emerge that will help him to understand exactly what importance the Genius of Palermo has for the city itself and to discover a secret. This is what the whole game is about, discovering what the genius jealously hides in its heart and what it represents.

The second place chosen for the route is the Church of Santa Maria dello Spasimo with the adjacent square, Piazza Magione, which is particularly important for the city of Palermo. The Genius is not the only protector of the city. During the harshest years of Palermo's history, also known as the "years of massacres", many people defended and protected it. As is unfortunately well known, the history of Palermo is intertwined with the reality of the Mafia.

It is not possible for us here to digress from the history of this reality which afflicts the capital; however, the game of Gymkhana cannot avoid recalling remarkable and irreplaceable men, such as Giovanni Falcone for the city of Palermo. The latter was one of the magistrates most committed to the fight against 'Cosa Nostra' (as the Sicilian Mafia is called). As part of the Anti-Mafia Pool, he conducted fundamental investigations into the Mafia in the 1980s and 1990s, bringing to light the links and negotiations between the Italian State and the Sicilian Mafia. Giovanni Falcone was killed on 23 May 1992, when he was blown up by the Mafia, together with his wife and the agents of his escort (the so-called Strage di Capaci). Giovanni Falcone embodied the hope, in those years, of all those Sicilians eager to rebuild the identity of their region, to eradicate the stigma that has oppressed that territory for a century. It was considered first the land of brigands and then of the Mafia, harassed by corruption and the self-interest of a few. Before the demolition of the district, Giovanni Falcone's family lived here. Piazza Magione is the birthplace of Giovanni Falcone, that the Genius nostalgically remembers as a brave hero of our time. Players can get to know this fundamental piece of the city's history by guessing who the memorial plaque on the site of the house in the square was dedicated to.

The church and monastery complex of Santa Maria dello Spasimo is the quintessence of the city of Palermo. It is located next to Piazza Magione in the historic Kalsa district. The monumental complex was built by Jacopo de Basilicò, a wealthy jurist who decided to honour his wife's testamentary wishes by building a church dedicated to Santa Maria di Gesù who "spasmed". She suffered from the pain of her son who collapsed under the weight of the cross on the way to Calvary, hence the name of the church.

The events related to its construction were very troubled: various difficulties arose that lengthened the time needed to build it and altered the original design; today, it is an open-air church. Despite the difficulties and the changes of use the church has undergone over the centuries, it has not lost its splendour, offering tourists a peaceful and spiritual space.

In the game, the genius will meet here Raffaello Sanzio. The Church of the Spasimo has long hosted a painting by the painter, "Lo Spasimo di Sicilia". The work, commissioned to the great painter from Urbino by De Basilicò in 1516 to adorn the funeral chapel that he had reserved for himself in the church, underwent various vicissitudes over the course of time; actually, it can no longer be admired inside the church as it is now in the Prado Museum in Madrid. Gymkhana players will therefore be able to discover this little gem of the place, although there is still a reproduction today.

Both Piazza Magione and the complex of the church of Santa Maria dello Spasimo are free of charge and accessible to people with disabilities due to the territorial layout and access ramps.

The third place chosen is Piazza Rivoluzione. Once you have visited the church of Santa Maria dello Spasimo, you can easily walk (or use a scooter) across Piazza Magione to Piazza Rivoluzione. The square is one of Palermo's historic places of interest and today is mainly a place for nightlife. Far off are the times when it was a place and symbol of revolution against the oppressors. It was the heart of Palermo's Risorgimento and a symbol of the fight against the bourbons. With the revolutionary movements of 1820 and 1848, the square became a popular theatre for riots and protests against the bourbons.

People of Palermo chose this place because of the presence of a peculiar element that represents the city: the sculpture of The Genius of Palermo. In the centre of the square, there is one of the eight sculptural representations of the Genius, also known as "the Genius of the Tricolour". This name was given to him because of the custom of the citizens to drape the statue with the Italian tricolour flag, with the Triskelion, the symbol of Sicily, in the centre. In this way, the Genius strengthened its meaning of protecting the city by becoming a supporter of Palermo's desire for freedom.

The game inevitably had to take this place into consideration. In the red thread traced by the Genius, in Gymkhana, Piazza Rivoluzione is for him a nostalgic place of a city that wants to get rid of the oppressors. The Genius of Palermo recalls in history redemption and social justice, confirming his social role of protector of the city.

Furthermore, the square would have never taken the name Piazza rivoluzione if it had not been for the statue itself. The bourbons understood the citizens' attachment to the statue and its claim as a symbol of the struggle; so, in 1852 they decided to move the statue to the municipal warehouses of the Spasimo (the complex, as already mentioned, underwent countless transformations of use). On 7 June, however, with the arrival in Palermo of Giuseppe Garibaldi, people moved the statue back into the square, which has been called since that time Piazza Rivoluzione.

After Piazza Rivoluzione, the Genius continues its walk through the historic centre until it reaches another large and famous market in the city: La Vucciria.

The Vucciria is a well-known historic market in Palermo, along with others called Ballarò, Il Capo, Mercato delle Pulci and Lattarini.

The name of this market comes from the French word boucherie, meaning butcher's shop.

The market was originally intended for the slaughter and sale of meat. Furthermore, 'Vucciria' in Palermo dialect means 'Confusion'. This name was

very appropriate for the market because of the confusions of the sellers' voices, called 'abbanniati' in Sicilian, which adorned this place in its daily life. Today, the Vucciria has undergone some changes in use, becoming a symbolic place in Palermo during the day and a place for Palermo's nightlife. Even though it no longer looks like a market, visitors of Vucciria can still savour the flavours of Palermo; the voices of the vendors have been reduced, leaving room for the kind smiles of the restaurateurs who entice tourists with their dishes to eat on site or take away. So, they allow visitors to get a taste of Palermo's street food. There are still some fish vendors who sometimes let visitors taste some boiled octopus to entice them to buy.

Those who visit the Vucciria will certainly be fascinated by the smells and colours of a place that represents the hospitality, freedom, and contradictions of Palermo. Especially during the night-time movida, visitors will appreciate the music and the clubs that still keep up the name of the market by making "Vucciria".

During the walk with the Genius, we will discover many secrets of this place, such as the 'Balati ra Vucciria', a Palermo's saying linked to its paving. The word Balata, plural Balati, comes from the Arabic Balath and means marble slab. It is also important the legend of the Vucciria dragon, a legend that connects Palermo to Egypt.

In this place, however, Gymkhana players are sure to find another peculiarity, a third sculptural representation of the Genius of Palermo, also called the Genius of the Garraffo, or in Sicilian, Palermu lu Grandi (Palermo the Great). The statue is in a side street of the Vucciria, near Piazzetta Garraffo.

The Vucciria, being one of the oldest markets and being close to the port, has been home to merchants and traders from Amalfi, Pisa, Genoa, and Catalonia since ancient times. In the 15th century, these merchants, wishing to pay homage to the city that had welcomed them, decided to decorate the Garraffo level (from the Arabic gharraf, full of water) with a fountain, on which to place a statue of the Genius of Palermo.

A few centuries later, unfortunately, the fountain of the Genius of Palermo at the Garraffo was dismantled and the statue of the Genius of Palermo was removed from the centre of the Garraffo square and repositioned in a walled paper shop where it can still be appreciated today, despite its condition.

During the Gymkhana route, it will be possible to see what the statue looked like a few centuries ago; players will be able to relive the past to appreciate the Genius in the present.

The Vucciria market is accessible from several points on foot, for example from Piazza San Domenico or Corso Vittorio Emanuele. The place is accessible for those with motor and visual disabilities.

A few metres from the Vucciria there is Piazza Villena, better known as Quattro Canti, the fifth place on the route. This octagonal square is at the crossroads of Palermo's two main axes: Via Maqueda and the Cassaro, now Via Vittorio Emanuele. The two streets divide Palermo into four districts: Palazzo Reale; Monte di Pietà; Castellammare; Tribunal.

Historical sources also call the square the Teatro del Sole (Theatre of the Sun) because during daylight hours at least one of the architectural wings is illuminated by the sun. The Quattro Canti are the four decorative schemes that delimit the space of the intersection. They were made between 1609 and 1620 and present an architectural and decorative articulation on several levels which, from bottom to top, follow one another according to a principle of ascension from the world of nature to that of heaven. The four floors of the façade are decorated as follows: on the lower floor, fountains representing the rivers of the ancient city (Oreto, Kemonia, Pannaria, Papireto); then, a Doric order containing allegories of the four seasons; the next order, in Ionic style, contains statues of the kings; finally, in the upper order, the four saints of Palermo, Agata, Ninfa, Oliva and Cristina, patron saints of the city before the advent of the new patron saint, Santa Rosalia. And it is precisely the latter that the Genius knows. Santa Rosalia and the Genius of Palermo are the city's official patrons; for this reason, during the feast celebrating the saint, known as the 'Festino', every 15 July, when Santa Rosalia's chariot arrives at the Quattro Canti, the procession stops and an ancient city hymn is shouted, 'Viva Palermo e Viva Santa Rosalia', to celebrate the city's patron saints in both the religious and cultural field.

However, at this point in the journey, the Genius does not reveal who his acquaintance is as he continues his walk among Palermo's monuments and looks for his beloved among its streets.

The southern part is englobed as the façade of the magnificent church of San Giuseppe dei Teatini, the sixth place selected for the Gymkhana route. Here the Genius is lost among the magnificent Baroque decorations. The church occupies a large area of the urban fabric with its elevations on the city's two main arteries. To the east it is bordered by Via Maqueda overlooking Piazza Pretoria, the seat of the city's municipality, and to the north by the ancient Cassaro. The interior is a real treasure chest, richly adorned with Baroque decorations thanks to the wise use of polychrome marble. Together with the use of pictorial decorations, they create an effect of pomp and elegance. All the ceilings are entirely frescoed, the altars are elegantly decorated with semi-precious stones, and the wooden furniture is also designed in the decorative Baroque spirit.

The church of San Giuseppe dei Teatini takes us back to the baroque and sumptuous side of the city, confirming that Palermo has many facets. On the one hand the humility and austere spirituality of the church of Santa Maria dello Spasimo and on the other the richness of colour of the church of San Giuseppe dei Teatini.

The Quattro Canti and the church are accessible and free of charge.

After visiting the church, the Genius will reach the last place on the route, Palermo Cathedral. Here he will desperately look for Santa Rosalia, and it will be the player himself who will have to recognise her on behalf of the Genius and allow the two to meet.

The history of Palermo's cathedral represents a synthesis of the city, so much so that it is called Palermo's 'history book'. As Palermo changed with new rulers over the centuries, the Cathedral underwent continuous remodelling, restoration, additions, and modifications, so the building shows signs of all the dominations that have followed it since its construction in 1184. Since 3 July 2015, it has been part of the World Heritage Site under the Arab-Norman itinerary of Palermo, giving evidence of the variety of artistic influences.

We can divide the history of the cathedral's construction into several periods, starting with its construction. The remains of an ancient settlement from the Punic period are preserved near the present church. However, in Roman times, the practices linked to the cult of Christianity began to spread and the first Christians began to take refuge in the underground caves, the catacombs, to celebrate the cult of the dead and escape persecution, of which we have evidence where Palazzo dei Normanni now stands. During this period, a small church was built for the sacrifice of Palermo's first martyrs. Under Byzantine rule, the building was demolished and rebuilt in Byzantine style, of which the basilica plan and crypt are still preserved.

After the Arab domination, the church was converted to Muslim worship and turned into a mosque. An inscription in Arabic, still visible today, is preserved on a column in the external portico.

The return to Christian and Catholic sovereignty took place with the advent of the Normans, thanks to the contribution of the Great Count Ruggero d'Altavilla. The mosque was readapted for Christian worship.

Therefore, the church continued to undergo many transformations.

Under the rule of the Normans, Christians, Muslims, and Jews coexisted in a relatively peaceful way. Palermo was the capital of the Holy Roman Empire under Federico II. For almost two centuries, the arts and architecture were permeated by the stylistic canons typical of the Middle East, blended with Nordic and Germanic concepts. The cathedral was also influenced by these elements, which are still visible today.

Over the centuries, the church has also undergone neoclassical and baroque influences, the latter during the bourbon era.

Although the Cathedral is dedicated to the Assumption of the Blessed Virgin Mary, it is known mainly for the reliquary of Palermo's patron saint: Santa Rosalia. The 'precious' urn that holds the sacred body of Santa Rosalia is in the Royal Chapel on the south side. The silver reliquary was made between 1631 and 1637 and bears witness to the Baroque influence.

The entrance to the cathedral is free and accessible, while organised tours inside are subject to a charge.

In the Gymkhana route, we cannot deepen the history of Santa Rosalia, the patron saint to whom Palermo is devoted, but we try to show how the city includes both culture and religion and how the union of these two systems can give rise to community traditions that constitute the essence of the city of Palermo and greatly influence the culture of its inhabitants.

History tells us that in 1625 Santa Rosalia saved the city from a terrible plague epidemic, thus becoming the patron saint of the city. In 1624, the plague spread through the city, sowing death and grief. Some time later, an extraordinary event occurred: a citizen of Palermo, Girolama la Gattuta, had a vision that revealed the location of the remains of Santa Rosalia. After relentless searching and digging near the cave of Monte Pellegrino, the bones were found on 15 July 1624. When doubts about the authenticity of the bones were dispelled, a solemn procession with the relics was organised. It is said that from that day on, no more victims were recorded, and the sick were suddenly cured. Santa Rosalia had freed the city of Palermo from the plague. Since then, the feast of Santa Rosalia has been held every year on 15 July, where the hymn 'Viva Palermo e viva Santa Rosalia' is shouted at the top of one's voice.

This sentence contains both the Genius and the Saint, and therefore the game ends with the player being asked to discover "The Enigma of the Genius"; it consists precisely in reconstructing this hymn using the letters that gradually appeared to the player during the Gymkhana path. In the game, the Genius is in love with the Saint, who reciprocates in admiration and esteem for a man who devoted his life to the city of Palermo, of which he is the personification.

The aim of the game is to demonstrate how the diversity of Palermo's styles, cultures and traditions is resolved by the creation of a harmony that makes it unique.

Palermo has built itself up through its rulers, its sins, and its virtues, and without its multiplicity the city would not be the same. The Genius and Santa Rosalia celebrate the city and all the people of Palermo.

SANTA MARIA DA FEIRA, PORTUGAL

Santa Maria da Feira is a municipality located in the Northern Region of Portugal, it is part of the district of Aveiro and the Metropolitan Area of Porto. It has an area of about 216 km2 and a resident population of about 139.000 inhabitants distributed among 21 towns and a population density of 641.9 inhabitants/km2 (higher than the national average which is 111.5 inhabitants/km2) (PORDATA, 2019). Santa Maria da Feira has excellent accessibility to the main road network, close to the cities of Porto, Aveiro, and Coimbra. This is a millenarian city, rich in popular traditions, with great relevance in economic terms at a national level and with a strong cultural dynamism.

The economy of the city is characterized by a robust and dynamic industry. Santa Maria da Feira is the world's largest industrial cork processing centre therefore this activity is of great importance to the municipality.

This city hosts some of the main cultural events of international and national relevance, such as the International Street Theatre Festival - Imaginarius, the Medieval Journey in the Land of Santa Maria, and the Christmas theme park - Perlim.

Regarding popular traditions, Festa das Fogaceiras is a religious festival that takes place annually on 20th January, to revive the vow made by the population to the martyr S. Sebastião against the black plague epidemic. Popular dances and songs also reflect the region's history which is perpetuated by several cultural associations that exist in the city. The gastronomy of Feira also stands out, in particular, through the Fogaça da Feira IGP whose confection is limited to the municipality.

The historical center of Santa Maria da Feira features several monuments of national interest, such as the Castle of Feira, the Church, and Convent of Lóios, the Church of Misericórdia, and the Municipal Market.

In view of this background, the places chosen to be included in the gymkhana were the following: Castle of Feira, Church and Convent of the Lóios, Café Castelo (Fogaça da Feira IGP), Cork Sculpture (which is located in the City Hall of Santa Maria da Feira), Church of Misericórdia, Municipal Market and the granaries (next to the Centro de Cultura e Recreio do Orfeão da Feira). The importance of these places is explained in the next section.

Historic value of the Route

Castle of Feira

The Castle of Santa Maria da Feira is classified as a National Monument by the Decree of 16-06-1910, DG, n.º 136, of 23-06-1910 [1]. This Monument is considered one of the most emblematic works of Portuguese medieval architecture of military type. This Castle would have been fundamental in the process of the Reconquest and the autonomy of the Portucalense County. For several centuries this Castle had several functions, namely as a military fortification, operations planning, protection of the royal family and as a residence for the Counts of Feira.

Given the strategic location of the Castle of Feira, it is presumed that the battle of São Mamede was planned there, in 1128, which contributed to the autonomy of the Kingdom of Portugal. This Castle would also have been considered a safe fortress since in 1188 King S. Sancho I would have made it available to provide shelter to his wife and daughters. After 1448, the castle came to be in the possession of the noble Fernão Pereira, who recovered it. Rui Pereira, son of Fernão Pereira was the first Count of Feira. This Castle was in the family of the Counts of Feira until 1700, when D. Fernando died without descendants. In 1722, the Palace of the Counts was destroyed by a strong fire. Between 1935 and 1940 the Castle received restoration works that gave it its present appearance, similar to what it was in the 17th century.

Church and Convent of Lóios

Church and Convent of Lóios, including the monumental staircase, is classified as a Monument of Public Interest by Ordinance No. 718/2012, DR, 2nd series, No. 237, 7-12-2012 in the category of Religious Architecture/ Convent [2]. This is a convent with a Mannerist architectural style.

This church belonged to the Portuguese Congregation of São João Evangelista founded in the 15th century, also known as the Friars of Lóios or “Azuís” (“blue” due to the colour of their habit). After the extinction of the Religious Orders in 1834, this Convent was given to the Municipality of Santa Maria da Feira, who used it for various functions. This Convent housed a Court and the Conservatory and, in 1878, the theatre D. Fernando II was inaugurated in this space. In the 20th century, the building underwent some restoration work and from the 1980’s, it became home to a museum. Since 2000, this has been known as the Convent of Lóios Museum.

Many of the buildings that once belonged to the Congregation of São João Evangelista all over the country, were transformed into hotels. However, in Santa Maria da Feira as it has been converted into a museum, it shows the history and the work that this Congregation developed and which very little is known about in Portugal.

Café Castelo/ Fogaça da Feira IGP

The Fogaça da Feira is classified as IGP through Order No. 9532/2015, of 21.08.2015 [4]. This is a sweet bread, with a slight taste and aroma of lemon and cinnamon, brownish color, stylized conical shape at the top with four spouts ("coruchéus") that suggest the four towers of Feira Castle that distinguish Fogaça da Feira from other types of sweet bread. Fogaça da Feira IGP has a historical relation with Festa das Fogaceiras. To obtain protection against the black plague, the people made a vow to S. Sebastião and promised to offer a fogaça, a tradition that continues to this day.

The geographical area for the production of this sweet is limited to the municipality of Santa Maria da Feira. Café Castelo is a historical café of the city founded in 1943 and produces the typical fogaça through traditional preparation and cooking, in a wood fired oven.

Sculpture Diorama Cork Factory (Santa Maria da Feira Council)

Santa Maria da Feira has a strong cultural dynamism, organizing several cultural events of international and national relevance, and a robust industrial sector, being the largest international cork transformation hub [5]. This sculpture "Diorama Cork Factory" aims to explore these two important dimensions of the city.

This sculpture was produced as part of Imaginarius [6], the largest international street theatre festival in Portugal and an international reference. Since 2001, this festival has invested in major international productions and the development of original creations, supporting local directors and actors.

Alexandre Farto, known as Vhils, is one of the greatest urban art artists in Portugal and was the creator of this seven meters high sculpture "Diorama Cork Factory". This sculpture was produced in cork, a raw material that corresponds to the bark of the cork oak tree and it is mainly used for the production of cork stoppers. This explores the cultural and social identity of the city, expressing the close relationship that exists between human beings and the environment in which they work.

Church of Misericórdia

The Church of Misericórdia of Santa Maria da Feira that includes the attached dependencies, staircase, and fountain, is classified as a Monument of Public Interest in the category of Mixed Architecture/Set through Ordinance No. 663/2012, DR, 2nd series, No. 215, 7-11-2012 [7]. Although the project of this church was executed in the Baroque period (late 17th century) it features inspirations of the Mannerist style.

This church is related to the Brotherhood of Misericórdia of Santa Maria da Feira. Most of Misericórdias in Portugal were founded during the reign of King Manuel I (1469-1521) to support and help the people in need. Santa Casa da Misericórdia de Santa Maria da Feira was founded in 1594, although some records show that it already existed before this date.

During the 17th century, the Brotherhood of Misericórdia accomplished some repair works in the small temple of São Francisco, however, they felt the need to enlarge this space, and in 1690 they began the construction of a new temple, in the place where there had been a church dedicated to S. Nicolau. D. Joana Forjaz Pereira Meneses e Silva, 6th Countess of Feira, played an essential role in this initiative. This woman was the director of Santa Casa da Misericórdia for several years, a unique and curious case at this time in history in Portugal.

Municipal Market

The Municipal Market of Santa Maria da Feira is classified as a Monument of Public Interest in the category of Civil Architecture/ Market through Ordinance No. 740-CF/2012, DR, 2nd series, No. 248 (supplement), 24-12-2012 [8]. This is a reference work of the 50's international and national architecture, being one of the main works of the architect Fernando Távora. This was an important Portuguese architect, awarded with several architectural prizes and distinguished with the title of Doctor Honoris Causa by the University of Coimbra in 1993. This Market is one of the most studied buildings in architecture courses in Portugal.

This Market also has some mosaic details by Gouvêa Portuense and Álvaro Siza Vieira with figures of traditional products that were sold at that time. This space was designed not only with a market function but also as a meeting point for the community. Currently, besides its function as a market, this market also hosts other cultural events, such as the Christmas Market that emerged as a complement to the "Perlim" theme park.

Granaries (Orfeão da Feira)

Culture presents a strong dynamism in Santa Maria da Feira. Here, are also included the popular traditions that are celebrated by the several folklore groups that exist all over the municipality, as is the case of the Regional Dances and Song Group of Orfeão da Feira. This was the first organized folk group in Santa Maria da Feira, officially created in 1981 to develop an ethnographic dimension in the territory.

These popular traditions have a strong relationship with the agriculture sector. At the end of the harvests, people would sing and dance to celebrate as a community. The harvests, particularly maize, were stored in structures called granaries. The purpose of these structures was to store and protect crops from unfavorable weather conditions, to guarantee good ventilation and airing conditions, and to ensure the subsistence of the people until the next harvest. These agricultural structures are found essentially in the northern region of Portugal and the Galician region of Spain.

Inspiration for the Game

The inspiration for this game was an event that takes place annually in Santa Maria da Feira - the Medieval Journey in the Land of Santa Maria - the largest medieval recreation event in Europe. In 2019, this event occupied 34 hectares in the historic center of Santa Maria da Feira and received around 700,000 visitors over 12 days.

Every year, this Medieval Journey represents a different historical period, differentiating itself by its historical accuracy, dimension (spatial and temporal), and the involvement of the community and local associations, to strengthen their self-esteem and sense of belonging. In 2019, this event involved the daily work of two thousand people and 400 volunteers, ensuring 1700 performances of animation.

Given the relevance of this event and the millennial traditions of the city, the theme of the chosen game was a time journey to medieval times. In this context, a group of three young people will make an unexpected journey in time. To return to their time, they will have to overcome several challenges and, at the same time, learn a little more about the cultural heritage and history of the city.

Reality vs Fiction

The medieval period was the inspiration for this game, however, there are some historical inconsistencies in this “time journey”, since the monuments and structures that are part of this route, were built at different times. Despite these incongruences, in each location, we tried to include some references to medieval times. This way, the game tries to include older and recent facts of Santa Maria da Feira’s history.

The Castle of Feira is a millenarian monument, with great importance. In the 12th century, it will have contributed to the foundation of the Kingdom of Portugal. There are also some references to fogaça in the 13th century. However, the first Count of Feira, Rui Pereira began to administer the lands of Santa Maria from the 15th century, the Lóios Convent was built in the 16th century and is Church, later in the 17th century. The Church of Misericórdia was built at the end of the 17th century.

Café Castelo was founded in 1943, the Municipal Market of Santa Maria da Feira was completed in 1959 and the sculpture "Diorama Cork Factory" was produced in 2013. The industrial dynamics of the cork sector began to be more pronounced from the 1950s and 1960's until this date agriculture was the main activity. Orfeão da Feira dates back to 1911 although it was officially established in 1975 and the granaries built on this site are also recent structures.

The choice of the places on the route, besides their cultural relevance for the city and the country, was also made so that they could represent the nobility, the clergy, and the people, the social groups that characterized medieval society. The relationship between each chosen location, the medieval period, and the history of the territory is summarily explained here:

Castle of Feira and Counts of Feira represent the nobility;

Church and Convent of Lóios and the Church of Misericórdia represent the clergy;

Café Castelo represents the fogaça and the secular religious traditions related to Festa das Fogaceiras, as well as the gastronomic culture of the city;

Cork sculpture represents a more recent history of Santa Maria da Feira, but also tries to make a bridge with the medieval culture through the inclusion of a group of street entertainments (mountebanks) in the game;

The municipal market makes the relation between a street market that would have been developed around the castle, one of the most important street markets in Portugal, from the 12th century and that would have given the name "Feira" (Street Market) to the castle and the city. In the market, we also include a reference to salt, since the Land of Santa Maria, with its old borders, had some salt pans, which was an important commercial product at the time for Portugal;

The granaries and the Orfeão da Feira, represent the people that were essentially dedicated to agriculture.

In this game, the names of the youngsters - Rui, Joana and Fernando - are the names of the Counts of Feira. D. Rui Pereira was the first Count of Feira, D. Joana Forjaz Pereira Meneses e Silva was a countess who stood out in the city and D. Fernando Forjaz Pereira Pimental was the last Count of Feira.

Accessibility of the Route

The route selected is relatively short, about 1.5 km, so the best way to get around is on foot. The Castle of Feira is located in a higher area, however, the access is suitable for people with reduced mobility. Most of the route is flat and has pavements and pedestrian areas so that access to the sites is suitable for people with reduced mobility.

The choice of the route took into account not only the physical constraints but also the economic constraints to accessing the buildings. As such, this route can be done by anyone at no cost. However, if people are willing to pay, they can visit and enjoy the city. Here some suggestions:

The Castle of Feira and Chapel can be visited by paying an entrance ticket. You can consult the entrance fees here: *http://www.castelodafeira.com/condicoes.asp*

The Museum of Convent of Lóios can also be visited by paying an entrance ticket. You can consult the entrance fees here: *https://cm-feira.pt/museu-convento-dos-l%C3%B3ios*

You can taste Fogaça da Feira and other traditional sweets in several coffee shops in the city such as Café Castelo which is part of this route, but also in other places such as “O Trovador” and the “Museu Vivo da Fogaça”.

If you have the opportunity to go around the city center, you can also visit the Termas de São Jorge, considered one of the best thermal spas in the country, the Paper Museum of Terras de Santa Maria, and Castro Romariz. Other places of interest include: the magnificent Europarque and Visionarium complex, the Santa Maria de Lamas Museum, and the Ornithological Park - Lourosa Zoo, which includes fauna from the five continents, duly integrated into their natural habitat, and rare and endangered species.

To find out more information about the city you can visit the following portal: *http://www.visitfeira.travel/index.php*

It should be added that this portal on the city’s tourism is part of the COLORADD system (*http://www.coloradd.net*) which aims to socially integrate color-blind people through a color identification system.

NICOSIA, CYPRUS

Importance of the city

Nicosia has been the capital of Cyprus for almost 1200 years. Most important monumental surviving examples of 13.th century architecture that dominates the island go back to the Louisianan period. During this period, beside the construction of a palace, inns, houses, churches and monasteries buildings, the city was surrounded by fortifications. Thus, the city has a plan with certain limits. In the 15.th century under the Venetian domination the existing walls were rebuilt. During this period, some buildings were destroyed, and some construction materials were reused in the construction of new buildings.

The function of some structures belonging to the Louisianan period were changed and re-used. During the Ottoman period (16th-19th Century), the existing religious buildings were reorganized for the needs (addition of the minaret, the mihrab, etc...) of the Muslim religion worship. Caravanserais on the island, inns, Turkish baths, covered bazaars, the tombs, a library and a covered market were built during this period. In particular examples of housing built on the Louisianan and Venetian structures continue to exist up to the present day. Education and administrative structures were built during the British period (19th -20th Century) and new settlements began to form in order to meet the needs of the growing population outside the fortifications. Monumental religious and administrative buildings of Nicosia walled city, the old Nicosia, were constructed during the Louisianan, Venetian, Ottoman and British periods.

The houses/residential area from the Ottoman period, which forms a large part, continues to exist today During this period, the population on the island consisted of Turkish, Greek and British people. The British period ended in 1960, and the Republic of Cyprus was established. Following the Turkish invasion, Nicosia was divided into two and continued to be the capital of both regions (recognized and unrecognized).

Turkish people started to live in the north, and the Greek people started to live in the south. Nicosia was divided into two in 1974. Touches of different cultures shaped the identity of the city of Nicosia. Despite the differences existing in itself, the city exhibited a coherent and consistent formation until the end of the British period. Until that time, Nicosia walled the city and its surroundings, especially in the architectural sense, is seen as a structure consisting of a central aspect of city identity, density, taking into account the climate conditions.

First of all, because of the hot climate, the streets are arranged according to the wind direction. In order to create shaded areas, the narrow and organic street forms were composed. The shaded areas are increased with the help of the wide range of eaves. Generally, houses with a courtyard surrounded by high walls, indoor and outdoor sofa plan type are dominated by the plan. In particular, public spaces have been designed in the city in order to enhance the quality of life and the environment. Clearstory windows are used to get the air flow from the streets into the residential housing. In order to create a shaded area, the inner courtyards are used as an area of “small- scale social life space”. Shady areas are increased with the help of the trees planted. Openings (windows/ doors), taking into account the climatic characteristics, use the rate of 1 to 2 as a rectangle design. In general, the ground floors are of stone and brick from local sources, while the upper floors adobe and lathing construction techniques are used. These materials provide natural insulation, particularly in hot climates and provide a cool living indoor environment.

The structures in the walled city of Nicosia, meet the citizens’ physiological, sociological, psychological, cultural and economic needs with these. The surroundings of the monumental structures built during the Louisianan and Venetian period (St Sophia’s cathedral-Selimiye Mosque, the bazaar, Venice column...) were turned into a public meeting space for users of the city during the Ottoman era. The city developed around the common areas consisting of the main axis, roads of the city and the squares (focus/joint points) were also preserved during the British period.

Buildings used by the public were arranged in the city's central areas while special/private buildings such as housing/residential, were positioned in other parts of the city. Some radical changes occurred in the existing architecture and the city's identity during the British period. In 1946 the British Administration issued the Street and Buildings Regulation Law which has been and still is the main legal and administrative means of controlling the physical development of Cyprus. Street Widening Regulation under this law was also issued in 1946, and applied to the walled city. Accordingly, the continuous building lines were partially widened without considering the organic historical texture. Some of the people who lived in the walled city of Nicosia in the 1950s began to migrate to developing new residential areas outside the city walls.

During the British period, to preserve the previous existing building identity in educational and administrative structures, yellow stone, dimensions, high ceilings, pitched roofs and inner courtyards continued to be used. In the Republic of Cyprus with the protection of the existing identity, the city continues to develop by the use of concrete materials. In 1974, after the war, the existing city identity changed significantly. Officially, the people who lived within the walls in the old city migrated to the new residential areas. In addition, the Turkish people who lived in the south side of the island migrated to the occupied north. Many of these people wanted to live in Nicosia, in the new residential areas.

Historic value of each location and its value in the gymkhana

Cyprus Museum

The Cyprus Museum is the island's main and largest archaeological museum, and charts the development of Cyprus' civilisation from the Neolithic Age to the Early Byzantine period (7th century).

The museum's collections are comprised of finds from extensive excavations from all over the island that have helped the development of Cyprus' archaeology, as well as its research into the cultural heritage of the Mediterranean.

Its value in the gymkhana pertains to the fact it works as a historical narration and a library of events, influences that came about through the centuries and how all archeological findings interrelate as a unison for perception and understanding.

Paphos Gate

Paphos Gate was one of the three entrances into old Nicosia through the Venetian walls that completely encircled the old city, and were designed by famous engineer Giulio Savorgnano in 1567.

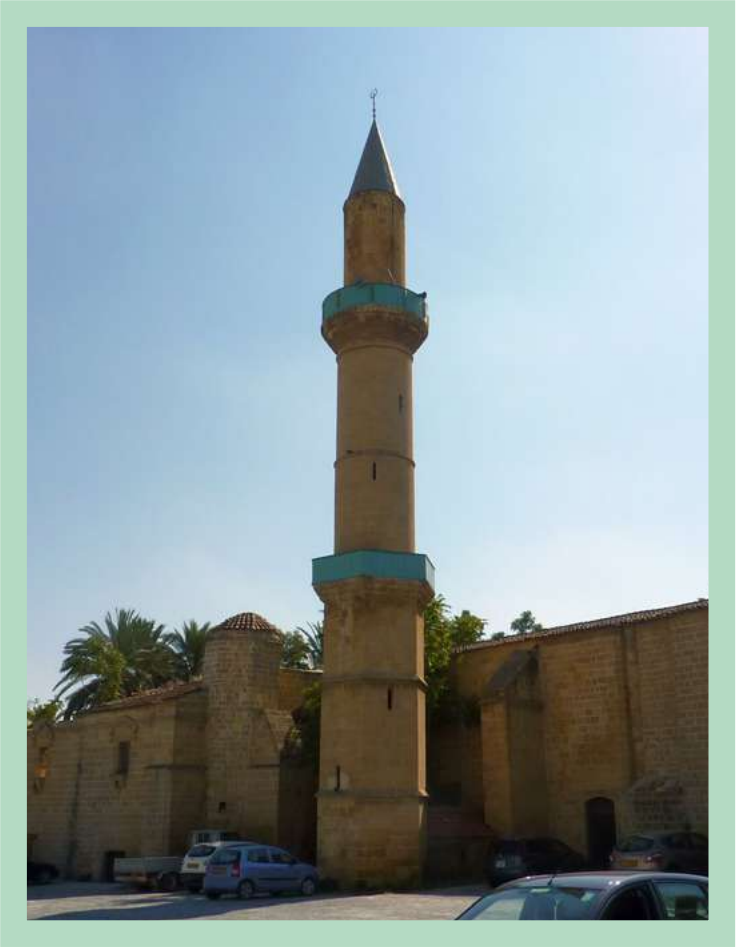
The road beginning immediately outside the gate led southwest to the town of Pafos, hence the gate's name. It was also known as Gate of San Domenico.

Beyond its historical aspect it shows as well the division between the old walled city and the city outside the Venitian walls where the museum is settled.

Phaneromeni Church

Located within the walled city of Nicosia on Onasagorou Street, Phaneromeni Church is one of the largest churches of the capital, and was built in 1872. The marble mausoleum to the east of the church contains the relics of the bishops and priests executed by the Ottomans on July 09, 1821. Opposite the church is Phaneromeni School, one of the most historic academic institutions on the island.

Clearly shows the clear out value religion occupied and occupies in the historical context of the native locals



Ömeriye Mosque

Ömeriye Mosque is a mosque in the walled city of Nicosia on the island of Cyprus, currently located in the south section of Nicosia. Following the Turkish invasion of Cyprus, the mosque gained significance as one of the most important sites of Muslim worship in the non-Muslim section of the island and the city

Indicates the rich tapestry of history that intertwines with orthodox Christianity and however different co-existed along with Christianity in a cosmopolitan manner.

Archbishop's Palace and St John's Cathedral

A religious, national and political monument, the Old Archbishop's Palace is an 18th century two - storey building in the heart of Lefkosia (Nicosia) that is closely associated with modern Cypriot history. Next to it is the new Archbishop's Palace, a two - storey stone building in Neo - Byzantine style housing the offices of the archdiocese and the residence of the archbishop.

The Cathedral of St. John the Theologian is the main church of the Church of Cyprus. It is located in Nicosia, the capital city of Cyprus.

The church was built in the fourteenth century at the site of Benedictine Abbey of St. John the Theologian[1] that had been founded by the House of Lusignan.

Archbishop Nikiphoros reconstructed the church in the seventeenth century. After the reconstruction, the church became the residence of the Archbishop of Cyprus in 1720. The enthronements of Archbishops of Cyprus are held there.

Clearly it shows the epitome of power in the island especially before the establishment of the Republic in 1960. The Greek Cypriots were in a way ruled socially by the Church.

Famagusta Gate

Famagusta Gate (Pyli Ammochostou) is the largest of the three entrances into old Lefkosia through the Venetian walls that completely encircled the old city, and were designed by famous engineer Giulio Savorgnano in 1567.

Originally known as 'Porta Giuliana' - the eastern gate of the walls - it was later renamed 'Famagusta Gate' as the gate opened onto the road that led to the most important harbour town of the island at the time, that of Famagusta.

Famagusta Gate has since been restored and the Nicosia Municipal Multicultural Centre now operates within the large vaulted passage and its two adjacent rooms. The internal entrance is very impressive, whilst the external one opens onto the moat that surrounds the walls.

Famagusta Gate is perhaps the most beautifully ornamented gate and stands as an architectural piece of great technique as it partakes of being pleasant in sight.

Venitian Walls

The Venetian Walls are a series of defensive walls which surround Nicosia the capital city of Cyprus.[a] The first city walls were built in the Middle Ages, but they were completely rebuilt in the mid-16th century by the Republic of Venice. The walls are still largely intact, and are among the best preserved Renaissance fortifications in the Eastern Mediterranean. They are a major tourist attraction.

The Venetian walls of Nicosia have a circular shape, with a circumference of c. 5 km (3 miles). The walls contain eleven pentagonal bastions with rounded orillons and three gates. Venitian walls surround the old Nicosia and give Nicosia its own unique identity. All Cypriots identify Nicosia as the walled city and to their mind Nicosia is only the walled city.

How does the protagonist relate to it

The protagonists in Gymkhana are both the students and the teacher as they go around all these monuments that all have access to either by walking, cycling or even while in a wheelchair. All monuments unify in a whole as they complete each other in architectural, historical, educational, social, mythical aspects. By itself this is quite an education one can derive from this context. This relation of the protagonist or protagonists is like a trip in history, sounds, sight smells of different eras and how the whole entity of the city is shaped up in the present condition. Of course we chose the protagonist to be from the Pancyprian Gymnasium that is the most historic school of Cyprus and a very important landmark of the walled Nicosia.

Interconnection between reality and fiction. The legend within history

Any time one goes into a historical city, especially if that city has been at that location for eons, it is inevitable that any person if he is observant enough or interested enough will begin to discern important details that relate to the formation of the city over the course of hundreds of years. Most people when going through historical monuments will of course be interested and quite possibly will like the monuments. At this point they thought the individual will be captured by the optical element and as such the sense of sight. That's why we decided to put the fictional characters to be students and a teacher playing around the monuments of their city. We completely interconnect the fiction with reality as our script could take place as reality as well at any point of time.

Accessibility in relation to each place.

All the seven monuments of Gymkhana in Nicosia are wheelchair accessible. In addition it is all within walking distance and easily accessible on foot. Furthermore, everyone could have access to the monuments by using the L1 bus route of the small municipal buses. Buses are wheelchair accessible as well.

COVID-19 JUSTIFICATION

The international crisis caused by COVID-19 has fully affected the development of the Gymkhana 5.0 project: Cultural heritage for youth.

This situation began practically at the same time as our project and from the first moment we had to look for alternatives to make it run smoothly.

The first meeting was transformed from face-to-face to digital and, at that first moment, we thought it would be a much shorter situation than it finally was, so we took it for granted that we could continue with the rest of the programming as it was planned.

Being aware that the evolution of the pandemic was going to be much slower than expected, we reconsidered the entire project to do as much as possible digitally. That is why we had to request an extension in the duration.

All the meetings that had to be held in person have been carried out electronically and, the testing of the APP, in some of the locations, such as Palencia, in Spain, has had to be done in several days to do it with smaller groups, adapting to the limitations established by the Government when holding meetings and encounters of people who do not live together.

Despite all the inconveniences we have managed to carry out the project with great results, all the partners of the consortium have adapted to the situations they have had to face and finally we have been able to elaborate the intellectual products that had been proposed: the APP for mobile devices with the Gymkhana game and the Methodological Manual with the explanation of the process and useful information to be able to implement the game in other locations.

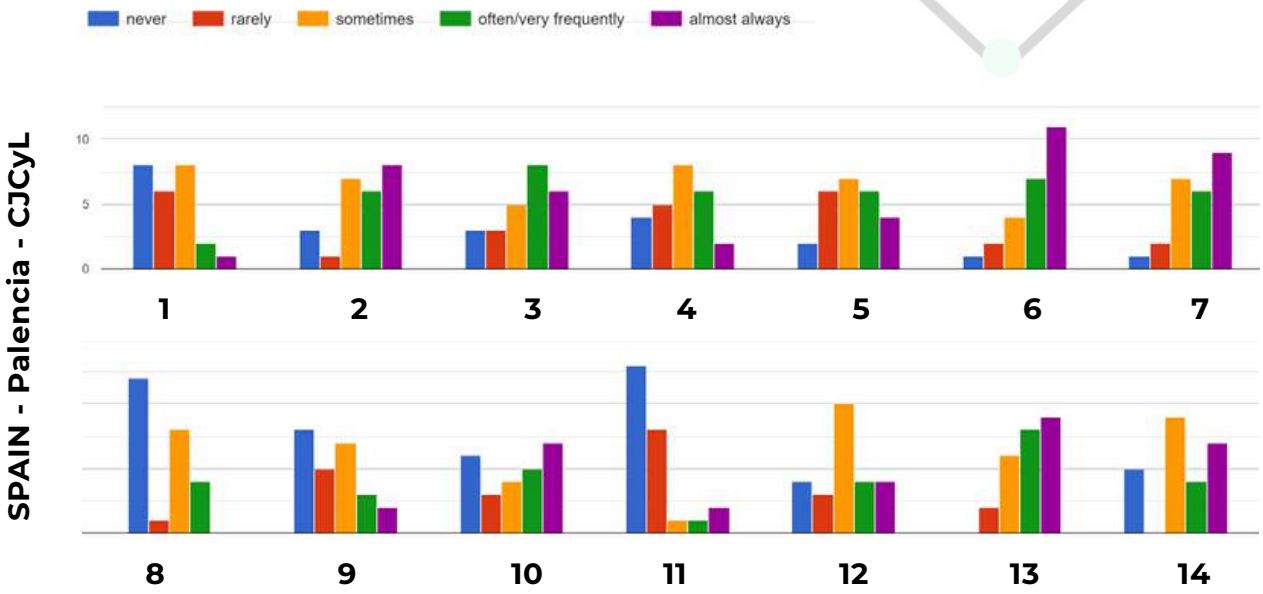
Due to exceptional circumstances, Erasmus+ allowed part of the amount granted for international meetings, which could not be held, to be used for other activities, in our case we have prepared a Tourist Guide for each of the cities in which the game takes place so that users, in addition to knowing the heritage points that the Gymkhana presents, get to know other places of interest in the city itself, in the area, restaurants, etc.

We have also made promotional videos and tutorials (in addition to the one established in the project) of the application and interviews with the participants and observers on the testing of the mobile application.

RESULTS

ANSWERS TO THE INITIAL QUESTIONNAIRE FOR PARTICIPANTS

1. Do you usually search for information regarding the cultural heritage of European cities?
2. When you visit a city, do you take time to get to know its cultural heritage?
3. When you travel or see other cities, is cultural heritage one of your priorities?
4. Do you usually visit museums?
5. Do you usually visit historical buildings?
6. Do you usually visit natural areas (mountains, lakes, etc)?
7. Are you interested in the traditions or culture of the cities you visit?
8. Do you go to the tourist offices or cultural information points in the cities you visit?
9. When you visit a city, do you take guided tours?
10. When you search for information on the cultural heritage of cities, do you do it through online searches or virtual resources?
11. Do you use any APP (mobile application) to increase your knowledge about cultural heritage?
12. Do you consider that during your educational stage you were offered sufficient knowledge about cultural heritage?
13. Do you enjoy increasing your knowledge of cultural heritage?
14. Do you know the cultural heritage of the city you are in?


never
rarely
sometimes
often/very frequently
almost always
SPAIN - Palencia - CJCyL
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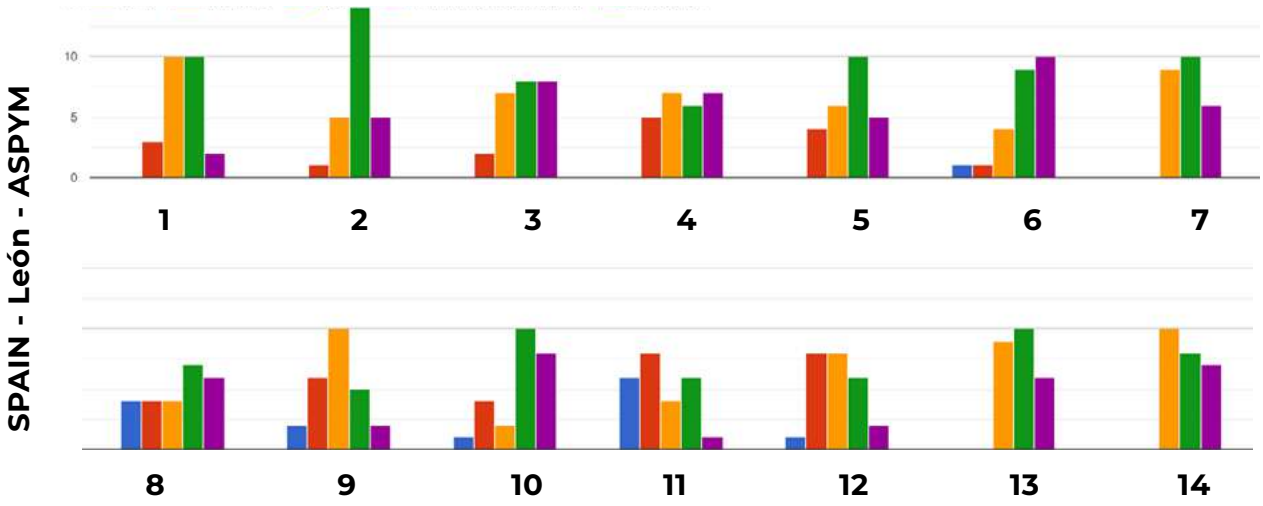
SPAIN - León - ASPYM
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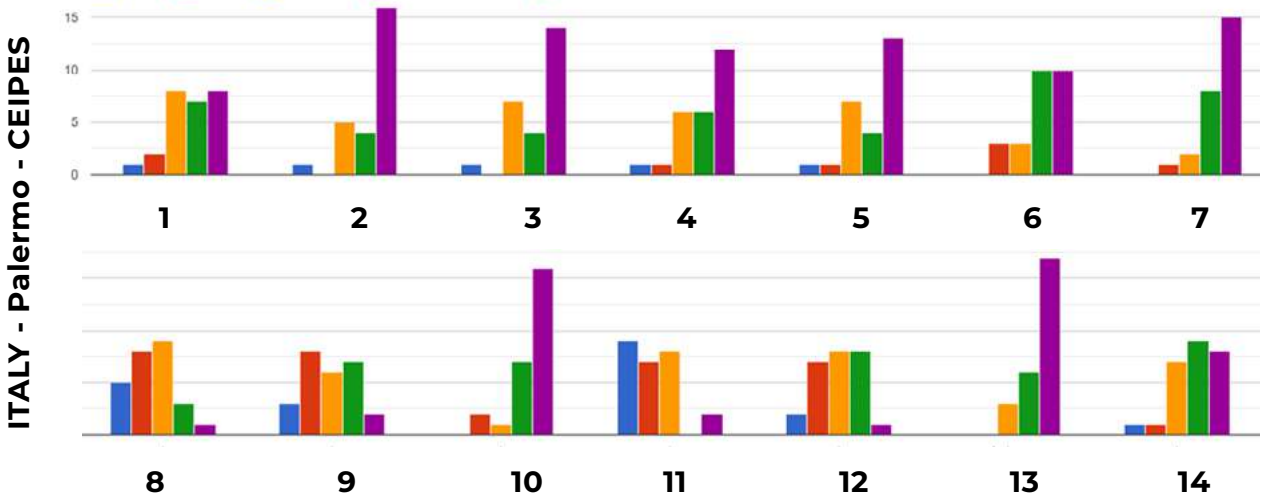
ITALY - Palermo - CEIPES
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10
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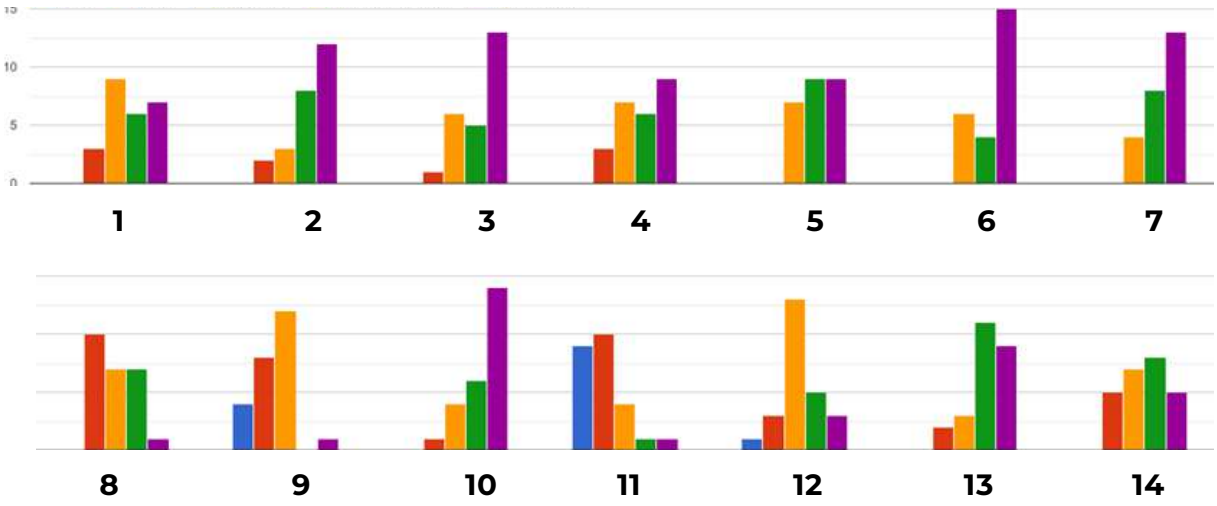
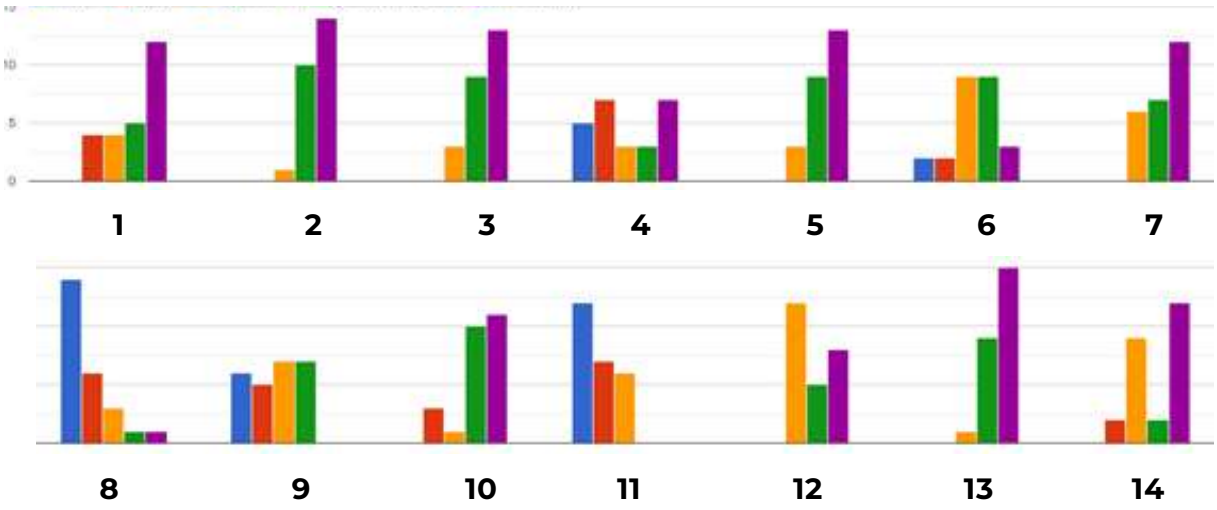
14

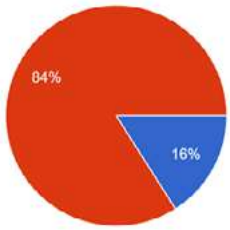
PORTUGAL - SM da Feira - Rosto Solidario



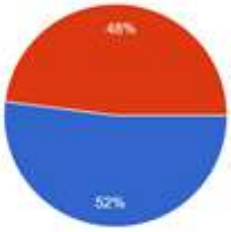
CYPRUS - Nicosia - Dione



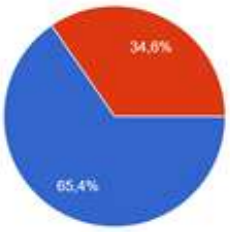
Do you know gamification as an educational tool?



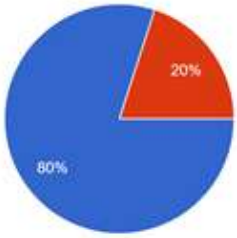
Palencia



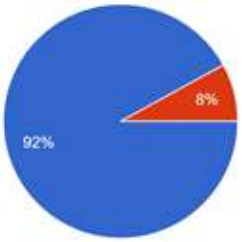
León



Palermo

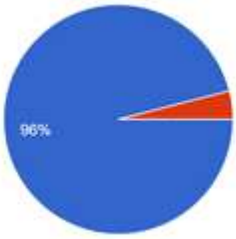


SM da Feira

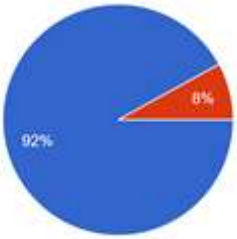


Nicosia

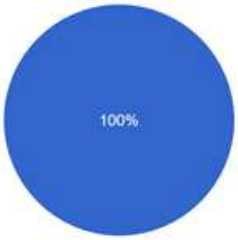
Do you think that the "game" as a means of learning is a suitable tool to increase knowledge?



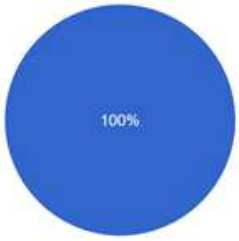
Palencia



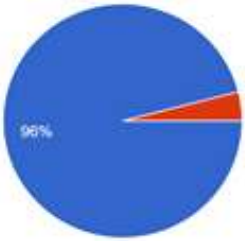
León



Palermo

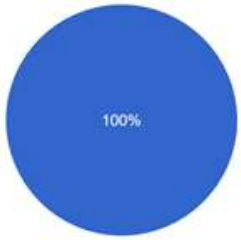


SM da Feira

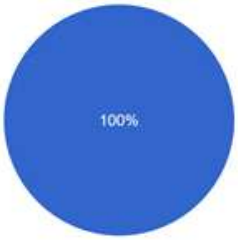


Nicosia

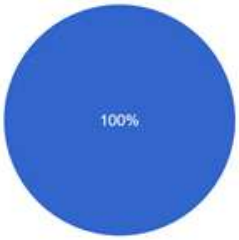
Do you think that "playing" as a means of learning is a motivating tool?



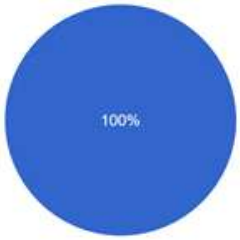
Palencia



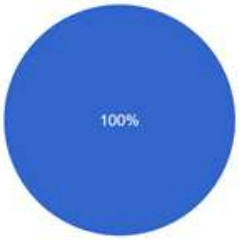
León



Palermo

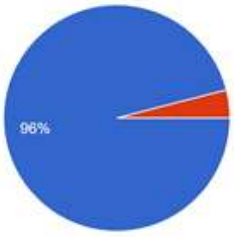


SM da Feira

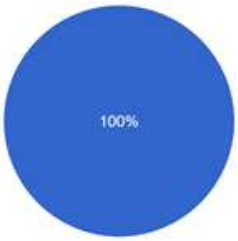


Nicosia

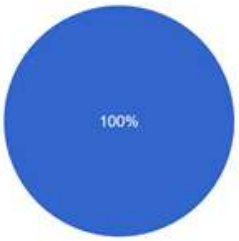
Do you think this game will extend your knowledge about the city?



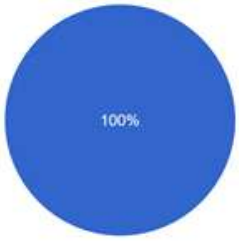
Palencia



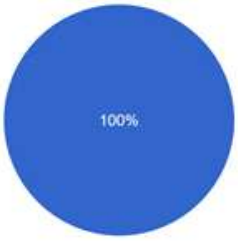
León



Palermo



SM da Feira

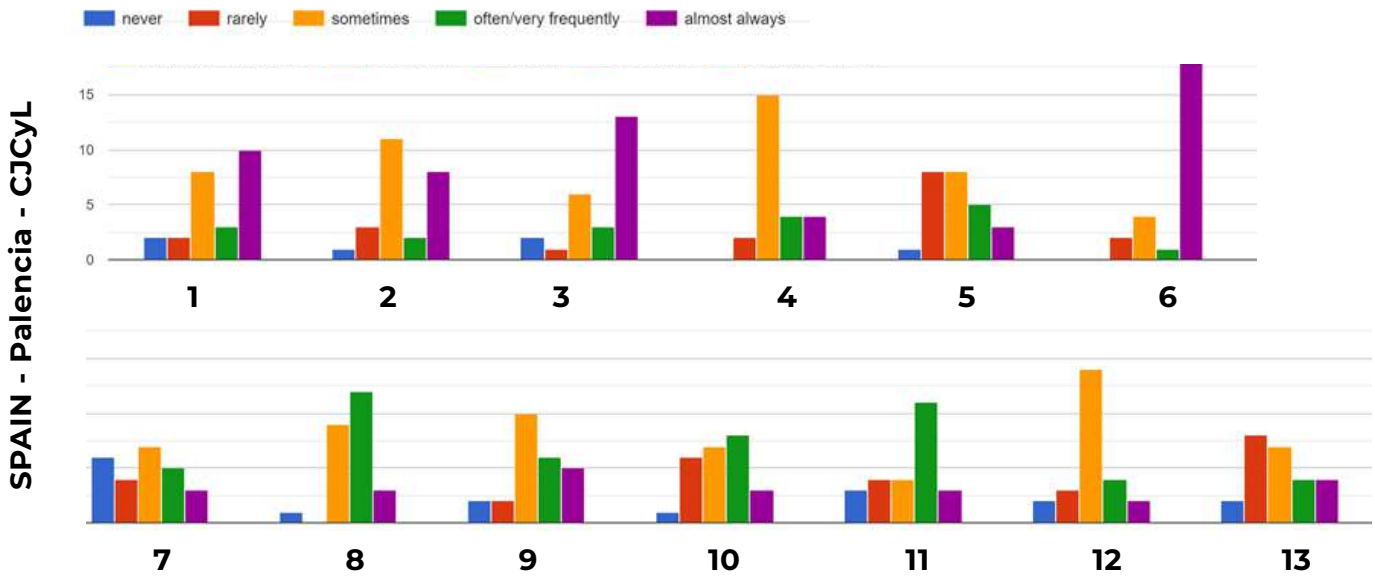


Nicosia

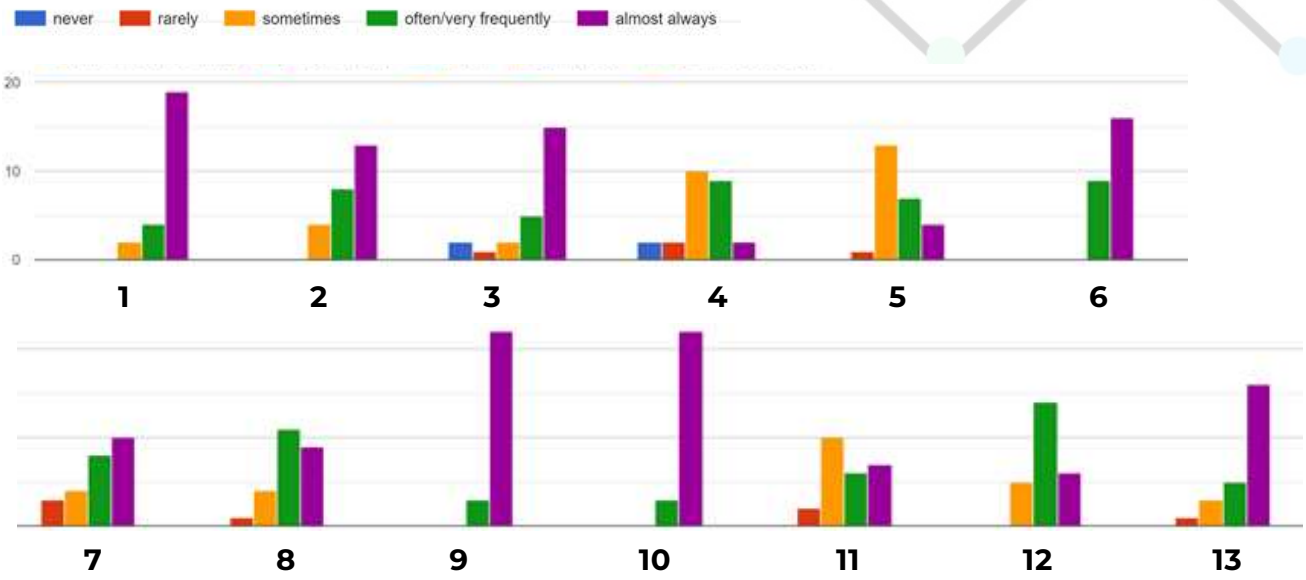
ANSWERS TO THE FINAL QUESTIONNAIRE FOR PARTICIPANTS

Technical and quality aspects of the APP

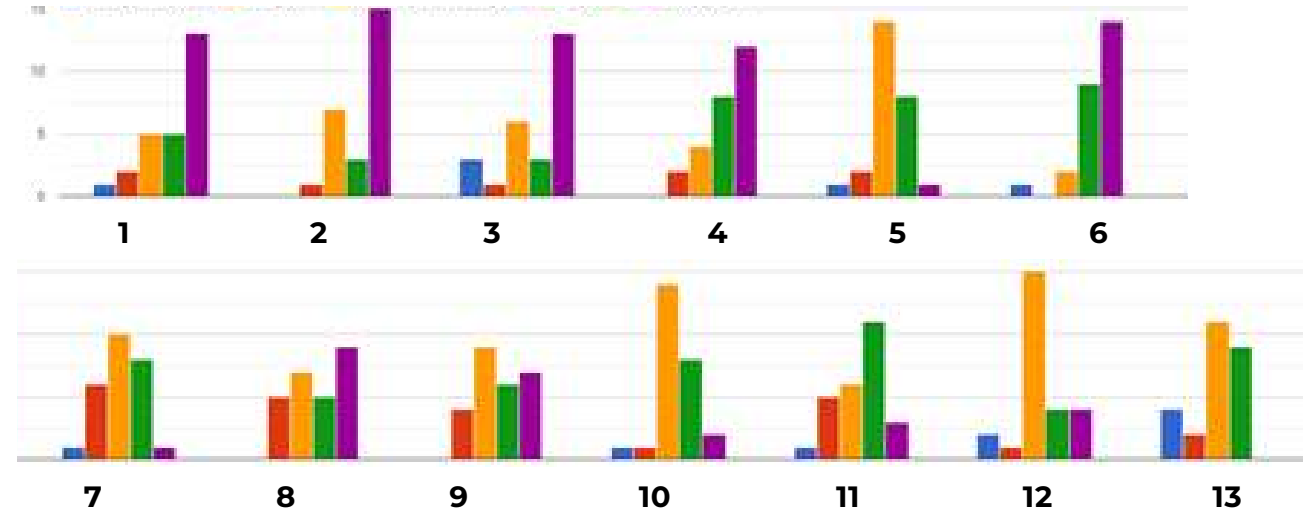
1. The app is easy to find in the Play Store
2. The information that appears in the Play Store is clear and adequate
3. I was able to download the app without problems
4. The video tutorial is helpful
5. The gameplay of the app is correct and intuitive
6. The language used in the app is easily understood.
7. The app has clearly marked way-finding buttons (exit, info, back, next,...)
8. I felt comfortable using this app
9. The images used in the app are adequate
10. The graphics and pictures are attractive
11. I found this app easy to use
12. Regarding the accessibility options for people with disabilities, were they adequate to your needs?
13. I consider that the stability of the app in its current version is good.



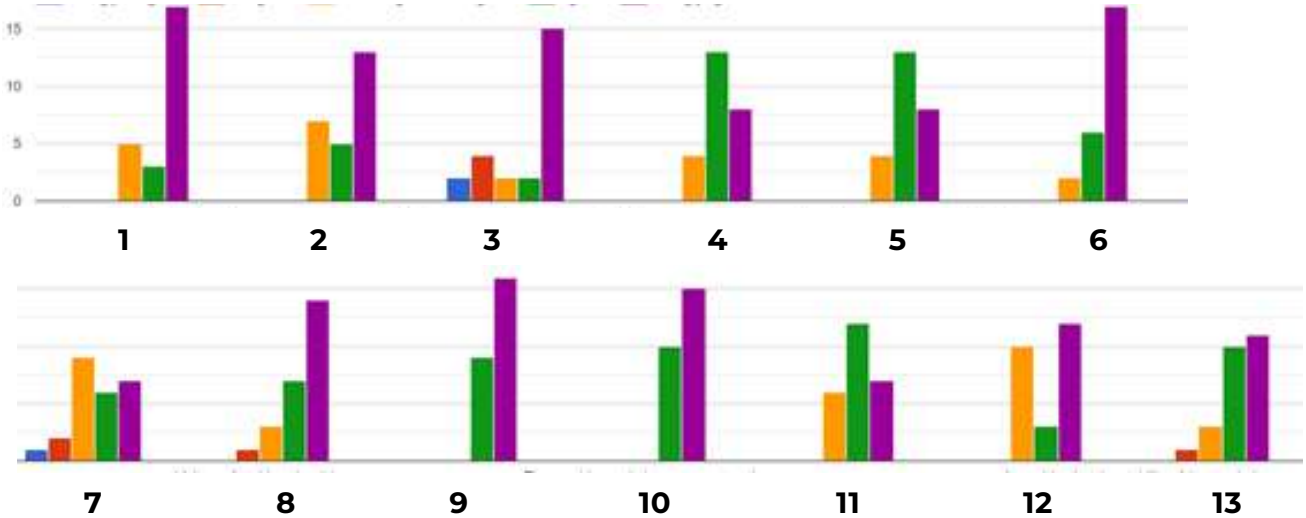
SPAIN - León - ASPYM

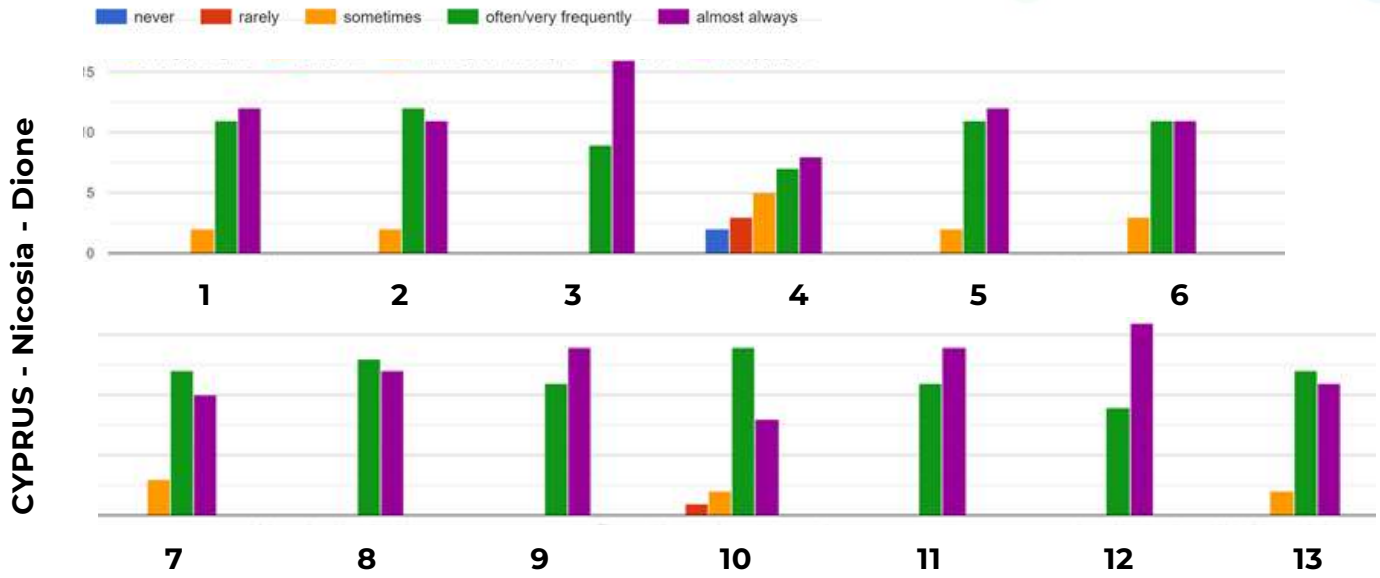


ITALY - Palermo - CEIPES

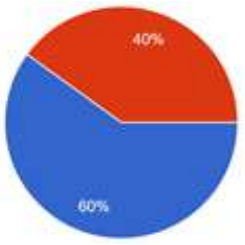


PORTUGAL - SM da Feira - Rosto Solidario

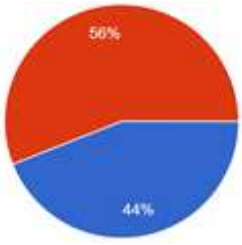




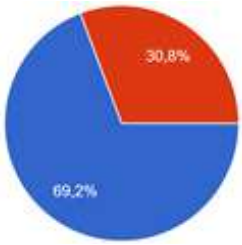
Did you experience a technical problem with the app during the activity?



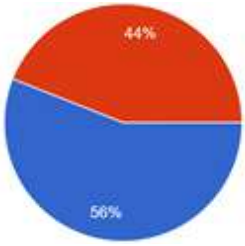
Palencia



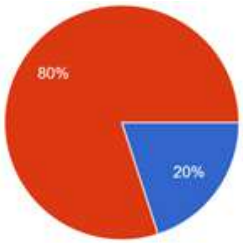
León



Palermo



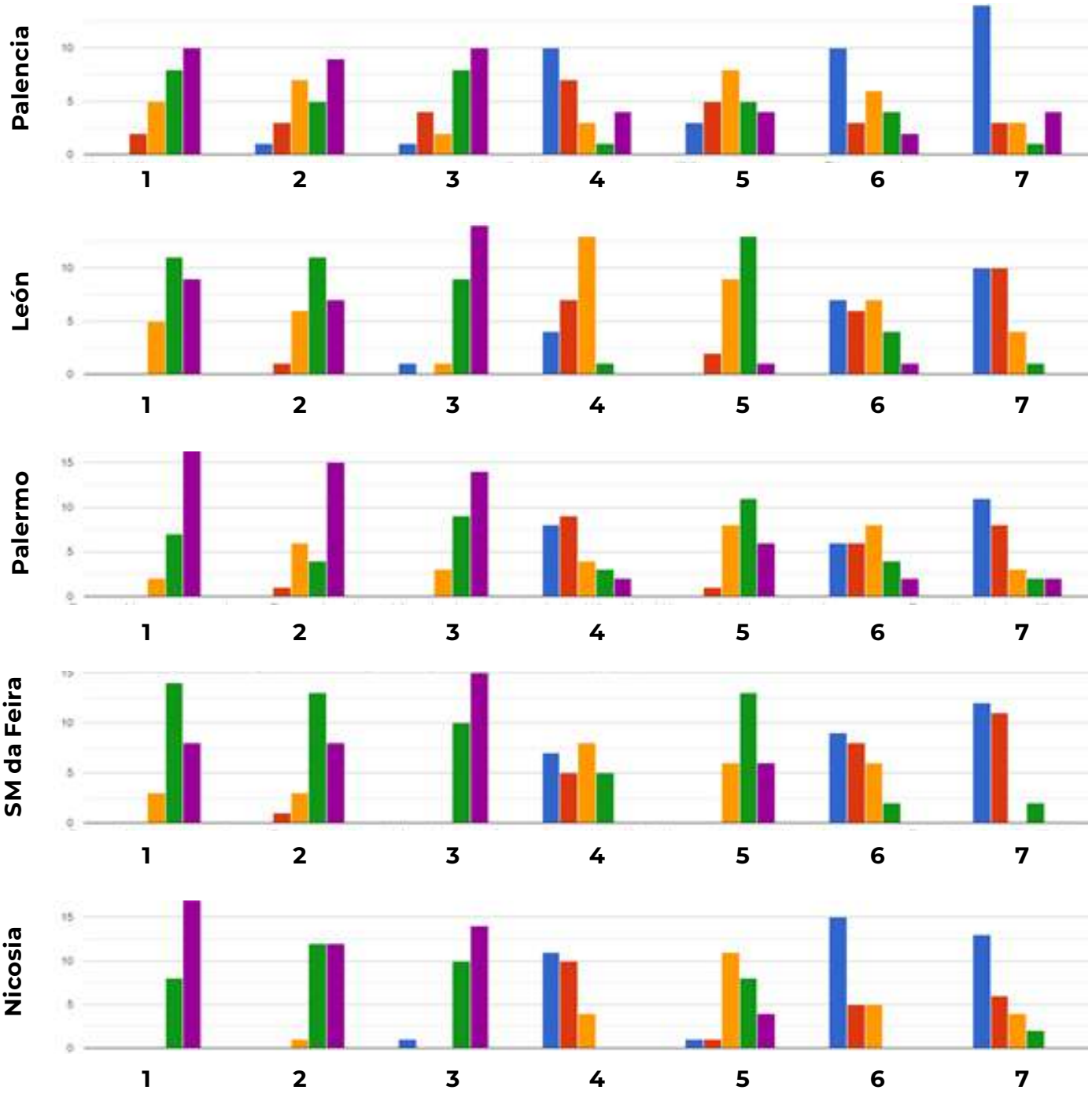
SM da Feira



Nicosia

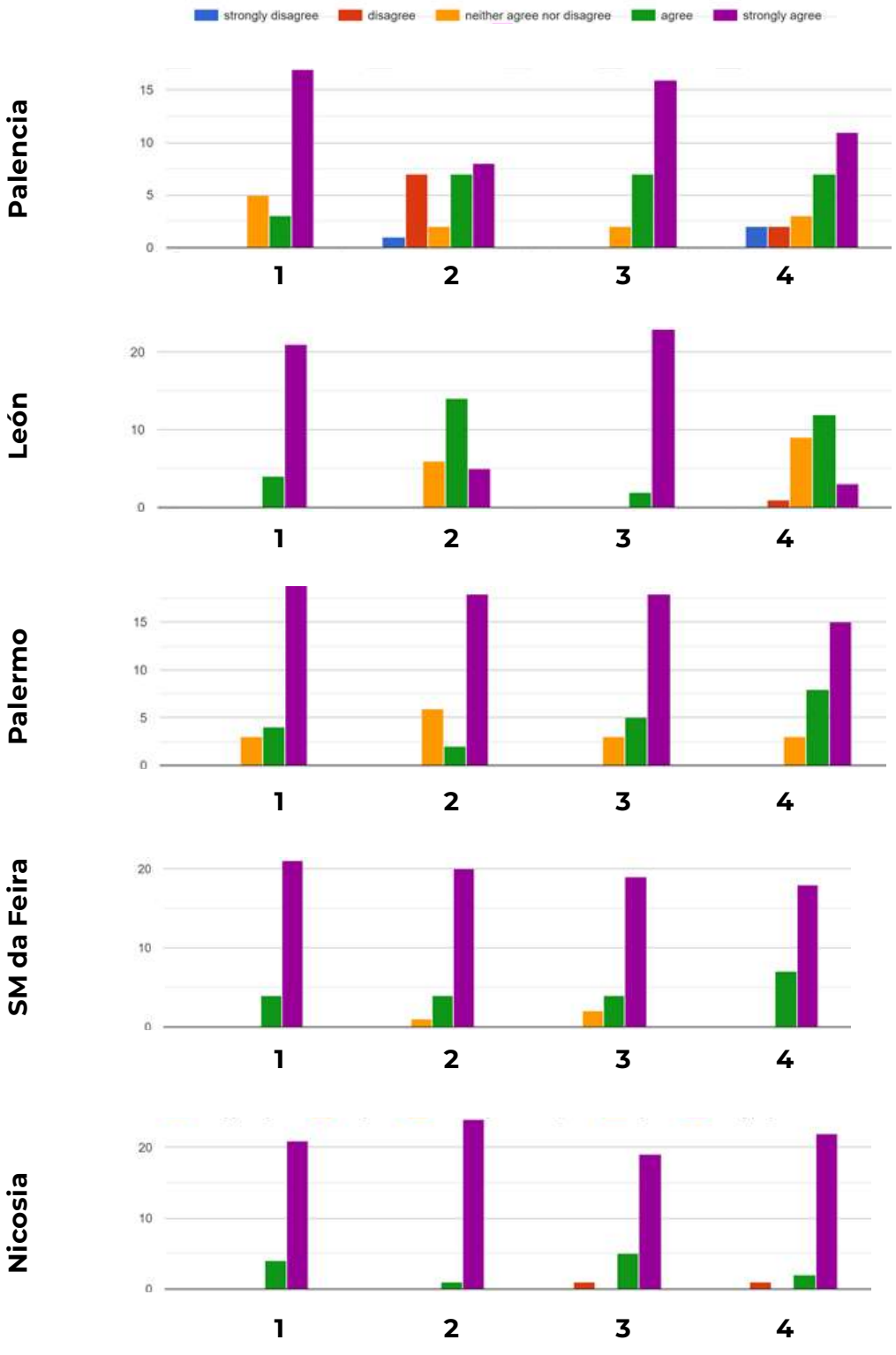
Quality of the Game

1. The story of the game is interesting.
2. The story of the game is engaging and motivating
3. The game has adequate information about heritage to solve the riddles.
4. I found the riddles of the game very difficult.
5. I found this game stimulating and immersive
6. The game is confusing.
7. The gymkhana has been difficult to complete



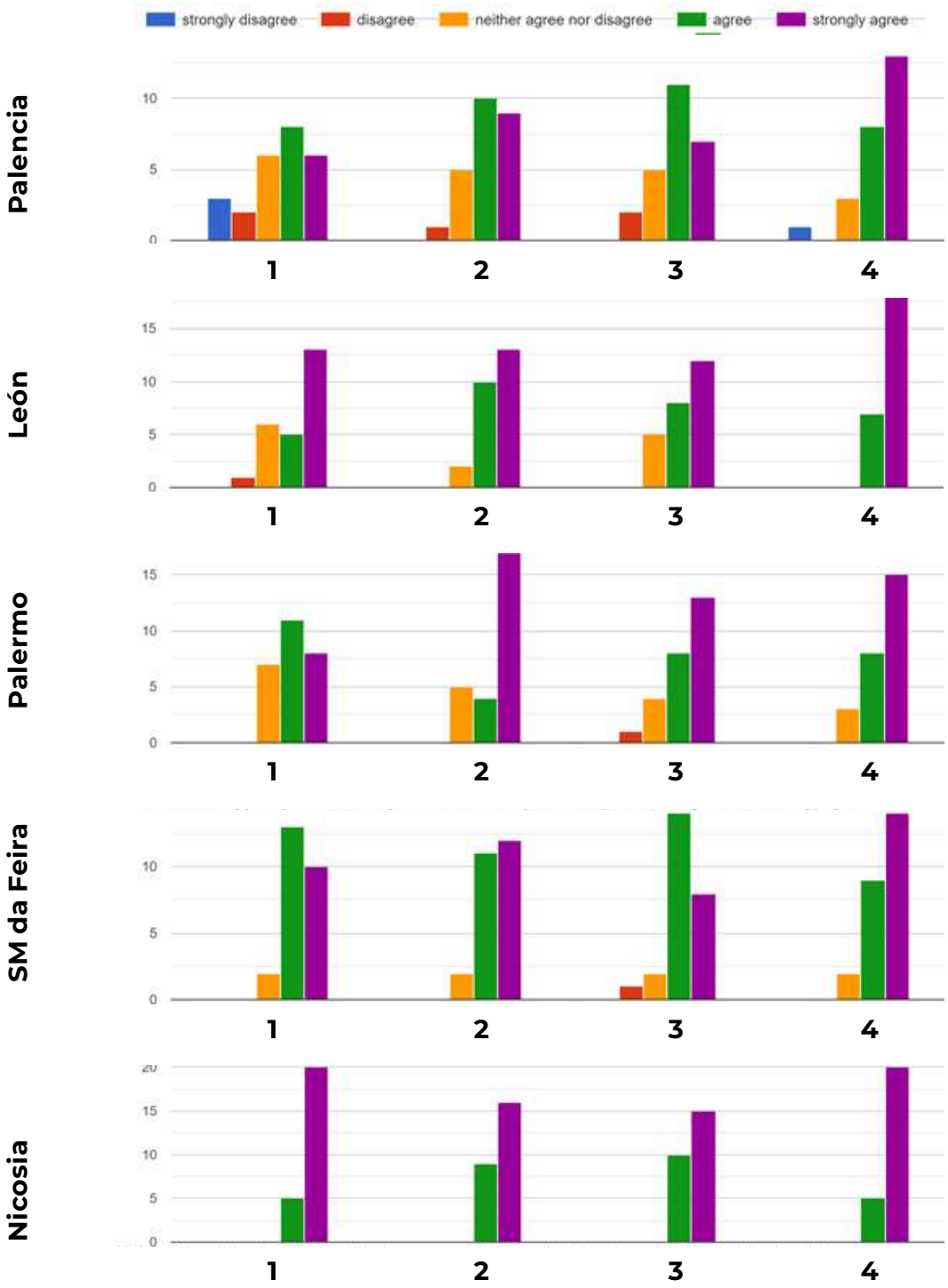
Path/Route

1. This route is accessible for me
2. The length of the route is adequate.
3. The places visited are representative of the cultural heritage of the city.
4. The distance between the several places is adequate.



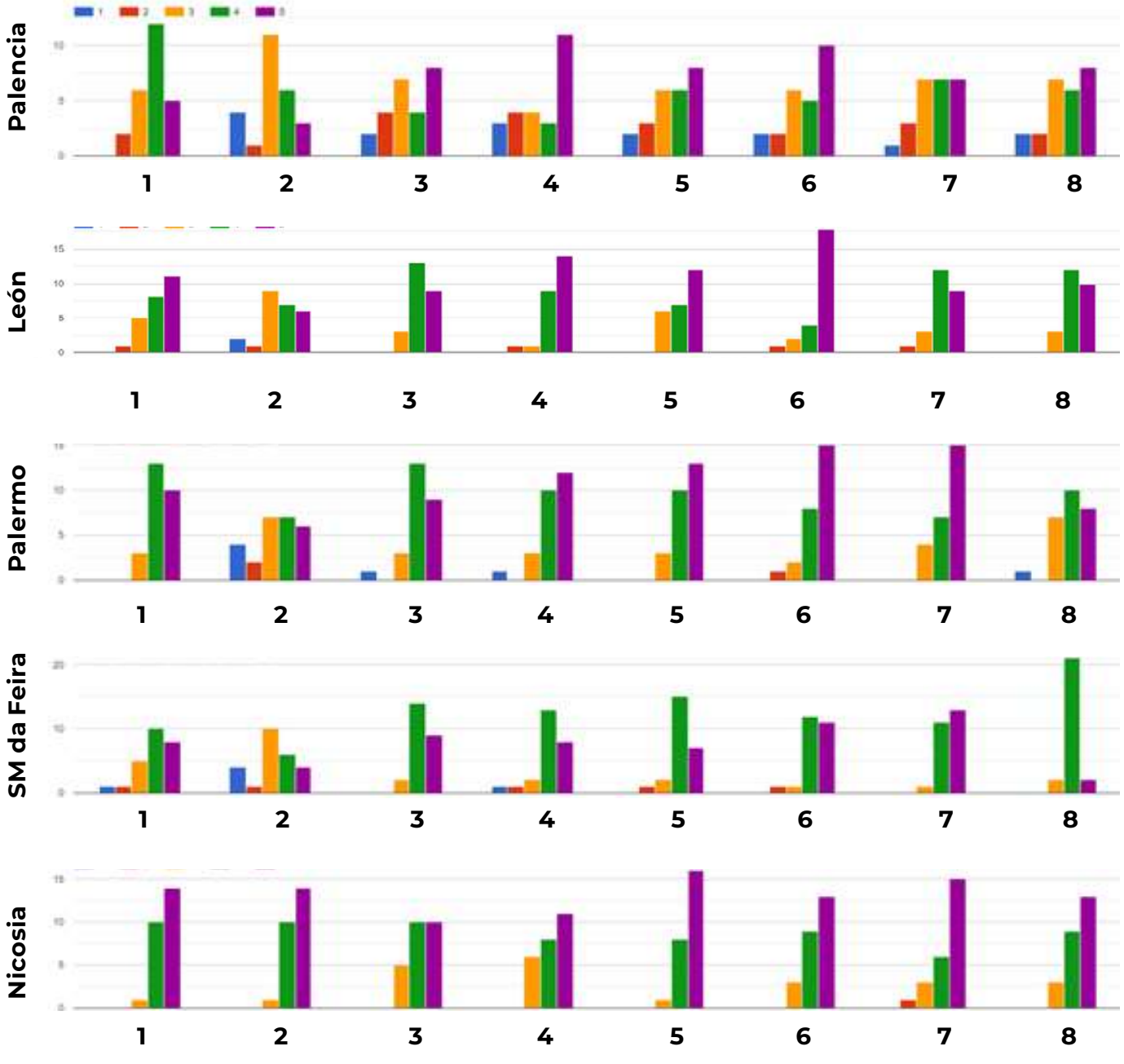
Heritage Knowledge

1. My level of knowledge about the cultural heritage of the city has increased
2. I consider that the methodology of this project favors the acquisition of knowledge about cultural heritage
3. The information offered on each of the selected points of the gymkhana is adequate
4. I consider that gamification is an appropriate tool to increase knowledge about cultural heritage

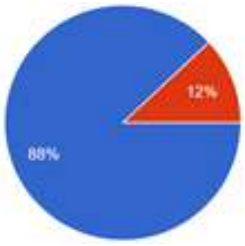


VI - Other Information

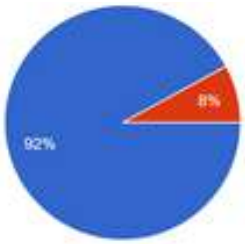
1. My knowledge of gamification as an educational tool has increased
2. My knowledge of the European Erasmus Plus strategy has increased
3. The Gymkhana met my expectations
4. I would like to do this experience again
5. I would recommend this app to my relatives and friends
6. I had fun during the experience
7. I think that the total duration of the Gymkhana is correct
8. How would you rate the app?



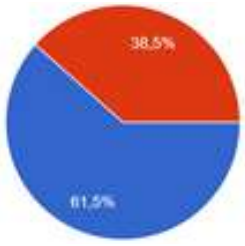
Would you like the app to have more locations available?



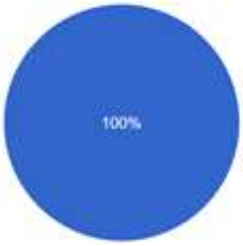
Palencia



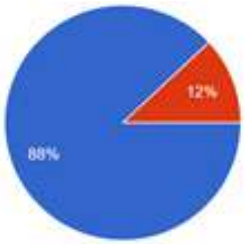
León



Palermo



SM da Feira



Nicosia

CONCLUSIONS

We have used questionnaires before and after starting the testing of the app. They include likert scale questions (1 to 5) yes/no questions as well as open questions to let the participants share their opinions freely. The templates of these documents are attached as annex at the end of this manual.

According to the answers of the young people that participated in the testing phase of Gymkhana, in Palermo, Santa Maria da Feira and Nicosia the most of them had already known the gamification as a non-formal education method, while the opposite it is extracted from the answers from Palencia. In Leon there is a division between those that had knowledge about gamification and those who had not. Regardless of their answers about their knowledge of gamification as an educational method, almost everyone believes that gaming is a suitable and motivating method to increase knowledge. Not only that but, everyone except a participant in Palencia had the expectations that this application would have increased their knowledge about the cultural heritage of their city.

In the technical aspects of the app even if the majority of the participants found the application easily in Play store, an important percentage of them in the testing phase in each city faced at least one technical problem.It is worth mentioning that the corresponding percentage for Palermo it is almost 70% of the participants while only 20% percent of the testers in Nicosia were confronted with technical problems.The most common severe problems identified were:

- The application did not open properly after downloading it
- Buttons were not pressed properly
- Game froze
- The video tutorial did not open
- Sound faults
- Failures when choosing activities
- The mobile spoke alone
- Photos could not be zoomed

Moreover, the poorest feedback and evaluation about the quality of the technical aspects is given from the people testing the application in Palencia, while the 25 participants in Nicosia, Santa Maria da Feira Leon, and Palermo were overall satisfied according to their answers that referred to the graphics, images, sound etc of their Gymkhana.

Regarding the part about the quality of the game there is a convergence of opinions by participants in all the five different gymkhanas. More specifically, in all the gymkhana's more than 80% of the young people that tested the application agree or strongly agree that the history (script) of the Gymkhana of their city is interesting and also is engaging and motivating. In the Gymkhana's of Palermo, Palencia and Nicosia the dominant opinion is the strongly agree while on the other hand Leon and Santa Maria da Feira agree is the most popular answer in these two questions. In addition, according to the answers of the participants Gymkhana have adequate information about heritage to solve the riddles. The riddles are neither easy nor difficult based on the majority of the 25 participants in Leon and Santa Maria da Feira respectively, while for the other cities the opinion that the riddles are not difficult is the most common. Even though in all the cities the vast majority of participants disagree that their Gymkhana is difficult to solve, there are many of them in the cases of Palencia and Leon that found the game confusing.

The questions in the testing phase that deal with the route and the path of each city's Gymkhana are those that have the higher percentage of positive feedback. In all the tests young people answered in favor that the route is accessible, the length of the route is adequate, the places visited are

representative of the cultural heritage of the city and that the distance between the several places is adequate. Only in the case of Palencia there is a high percentage of answers that disagree that the length of the route is adequate.

Furthermore, according to the questionnaires of the testing phase Gymkhana application managed to achieve its major goal which is to increase the knowledge of young people about the cultural heritage of those 5 cities. The majority of young people who participated in the testing phase answered that their knowledge about the cultural heritage of their city increased after using the app. Not only that but they conclude that this project and its methodology (gamification) are appropriate methods for learning the history and culture of the city.

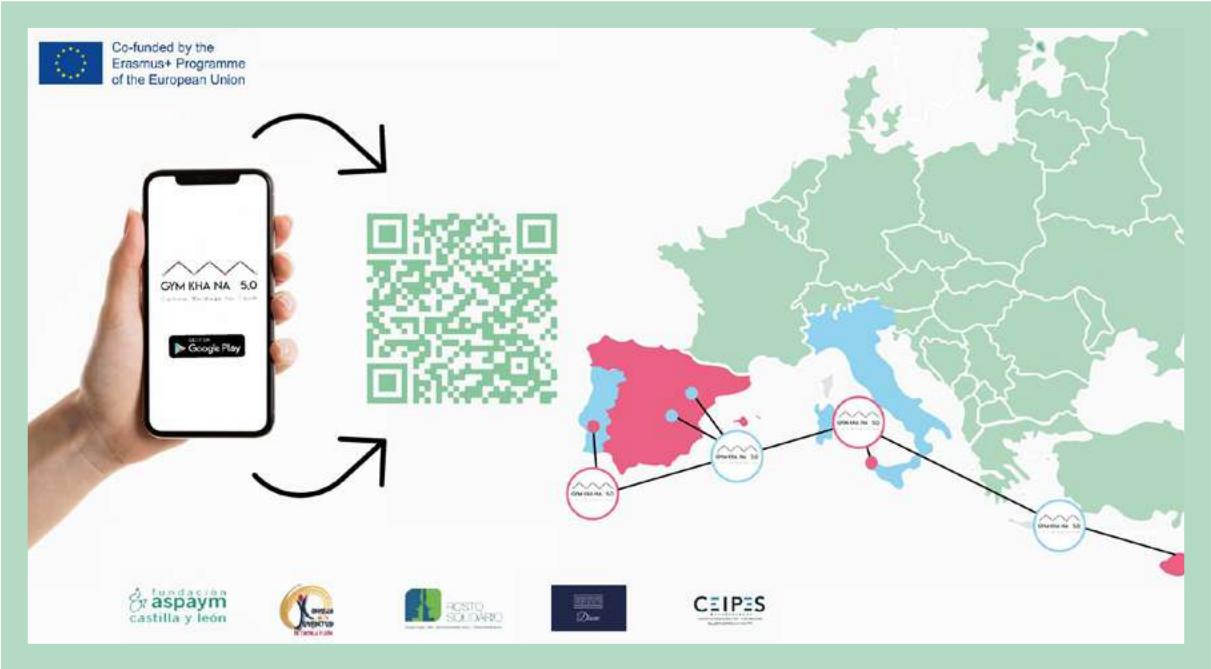
In all the cities almost all the participants have the strong opinion that the application should include more locations and not only the seven heritage places in each gymkhana that are at the moment.

Finally there were also many interesting suggestions for the improvement and the expansion of Gymkhana. Among others the most joint opinions are:

- Make the application a little more intuitive at the level of typing the buttons and others
- Shorter text (dialogues and monologues)
- Include more quizzes and games in the scripts
- Include more scripts for each city
- Increase the interaction and entanglement of the users
- Include more cities

IMPACT

During the project period, the partner organizations began to contact local organizations active in the area in the context of the project's themes. The strategy of creating a local network "Gymkhana 5.0" has its roots in the idea of the impact of the project, which places the app created as an educational tool for both young people and young operators.



The dissemination of the app is not enough, however, to ensure that it is enjoyed by the target group of reference, so the project has tried to branch out within the reference companies by initiating dialogues with local organizations. The latter have been and will be of vital importance for the promotion of this new methodology and for concretely making possible an improvement in the knowledge of European heritage and cultural education. First of all, the organizations involved (10 per partner by the end of the project) made a significant contribution to the creation of the app, this made sure that the results could be known in the local area from the very beginning, thus creating a link between the European and national level of the project and more specifically local. Furthermore, the involvement of local authorities has ensured that the testing phase of the app extends not only to young people but also to those who will promote the app and, perhaps, will use it, already giving us real feedback on the potential of this innovative tool.

The impact on the territory will derive precisely from the local connections implemented during the project period and thanks to these, this educational tool in the form of an app will be able to take hold very easily, because it has been tested and shaped for the needs of each territory involved in the partnership.

The age difference of the representatives of the organizations involved will also be decisive, from young tourist guides to organizations such as long-standing hotels with a great deal of experience in the cultural sector of their city. This difference in age and institutions also brings with it different approaches to the way art and digitization are treated and will be useful to further radicalize a more extensive and varied local network. The focus of the local network “Gymkhana 5.0” is precisely this: to spread and make the cultural heritage usable but above all to approach it with a different perspective, that of the game. Provide youth workers and tourist guides with a new way of talking about their territory with young people. Precisely for the latter reason, the objectives of the project become realistic: (30 organizations per country after one year from the end of the project (total: 150 organizations) and 50 organizations per country after 2 years from the end of the project (total 250 organizations). The actual measurement of the impact, however, will take place through the survey the app has already been equipped with. We expect that within one year of the end of the project the app will receive a percentage of satisfaction that goes over 70%.

Given the possibility for at least 5 years to keep the app active on the play store, these data will be constantly monitored with the aim of updating the app as needed to ensure usability and sustainability throughout time.

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ANNEXES

CONTACT INFORMATION:

ENTITY			
NAME		**SURNAMES**	
POSITION			
PHONE		**MOBILE PHONE**	
EMAIL			
NAME		**SURNAMES**	
POSITION			
PHONE		**MOBILE PHONE**	
EMAIL			
NAME		**SURNAMES**	
POSITION			
PHONE		**MOBILE PHONE**	
EMAIL			

SOCIAL NETWORKS:

ENTITY:	
Web:	
Facebook:	
Instagram:	
YouTube:	
Twitter:	

GYM KHA NA 5.0
Cultural Heritage for Youth

Dissemination Report

Co-funded by the Erasmus+ Programme of the European Union

CEIPES
CENTRO INTERNAZIONALE PER LA PROMOZIONE DELL'EDUCAZIONE E LO SVILUPPO

Number Project: 2019-2-ES02-KA205-013467

NO.	Type of activity	Dissemination Channel	Title	Date	Place	Level	Type of audience	Syze of audience	Countries adressed	Evidence/Link	Status	Comments

INTERESTED ORGANIZATIONS:

* This chart is an example. Please, copy it underneath as many times as needed

Organization's name:			
Short description:			
Contact person:			
Phone:		Email address:	
Country:			

GYM KHA NA 5.0
Cultural Heritage for Youth

Co-funded by the Erasmus+ Programme of the European Union

DATE
PLACE

ATTENDANCE LIST

GYMKHANA 5.0 Project Number: 2019-2-ES02-KA205-013467

Name	Surname	Date of birth	ID	Email	Signature

1

Evaluation Form - Observers / Youth Workers

I. Information from the observer:

Name and surname: _____

Age: _____

Gender

- Male ☐
- Feminine ☐
- I prefer not to say ☐

Nationality: _____

Profession: _____

II. Previous experience:

Do you know the gamification technique?	☐Yes	☐No
Have you worked with gamification projects before?	☐Yes	☐No
Do you have experience evaluating young participants in activities?	☐Yes	☐No
Have you used any app before in your activities with young people?	☐Yes	☐No
Have you participated in any project aimed at learning about heritage?	☐Yes	☐No

Cofinanciado por el programa Erasmus+ de la Unión Europea

III. Questions about the experience with the Gymkhana 5 app.

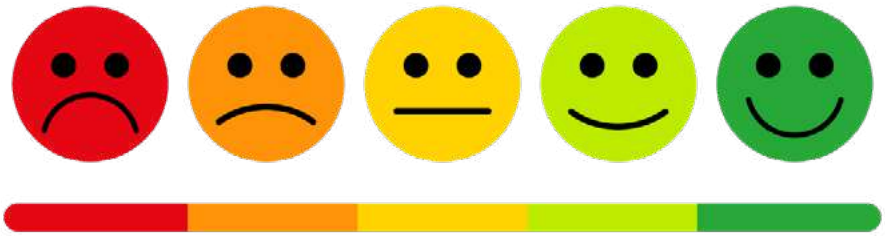
Evaluation of the participants: from 1 (lowest level) to 5 (highest level)

	Competitor ____	Competitor ____	Competitor ____	Competitor ____	Competitor ____
Interest in heritage					
Motivation					
Implication					
Teamwork					
Enthusiasm					
Respect the rules of the game					
Your participation has varied throughout the development of the game.					

Cofinanciado por el programa Erasmus+ de la Unión Europea

Has shown a inappropriate language or attitude.					
Has had fun during the experience					
Have needed help sometime during the gymkhana.					
Other aspects to highlight (specifies)					

Likert scale: Choose the answer that best represents the participant's experience (1: totally disagree, 2: disagree, 3: neither agree nor disagree 4: agree or 5: totally agree)



	1	2	3	4	5
Play					
The game has adequate information about heritage to solve the tests.					
They found the game difficult.					
They understood the purpose of the game.					
They felt comfortable using this app.					
Route					
This route is accessible to all people. The					
length of the path is adequate.					
The places visited are representative of the cultural heritage of the city.					
The distance between the different places is adequate.					

IV. General inquiries:

What were the main comments from the young people?

_____

_____

_____

_____

_____

Other aspects to highlight:

_____

_____

_____

_____

_____

Do you think it would be interesting to play this game in different cities in Europe?

☐Yes ☐No

Do you have any suggestions to help us improve the game?

_____

_____

_____

_____

_____

Do you think the Gymkhana met your expectations? (Provide skills / expand knowledge)

☐Yes ☐No ☐Maybe

Would you like to know more about the game or how to implement it elsewhere?

☐Yes ☐No

If so, tell us your email:

_____

Initial evaluation form - Participants in the testing of the app

I. Participant information:

Number: _____

Age: _____

Gender

- Male ☐
- Feminine ☐
- I prefer not to say ☐

Nationality: _____

Profession: _____

Smartphone Model: _____

This APP aims to be accessible to all people. Can you tell us if you have any kind of disability?

- Visual ☐
- Auditory ☐
- Driving ☐
- Other: _____
- None ☐

How did you find out about the project?

- Poster / flyer ☐
- Web page ☐
- Social networks ☐
- Through a known person ☐
- Other (please specify): _____

II. Knowledge about cultural heritage

To what extent do you agree with the following questions?

(1: Never, 2: Rarely, 3: Sometimes, 4: Often / very frequently or 5: Almost always)

	1	2	3	4	5
Do you usually look for information on the cultural heritage of European cities?					
When you visit a city, do you take the time to get to know its cultural heritage?					
When you travel or visit other cities, is cultural heritage one of your priorities?					
Do you usually visit museums?					
Do you usually visit historical buildings?					
Do you usually visit natural spaces (mountains, lakes, etc.)?					
Are you interested in the traditions or culture of the cities you visit?					
Do you go to the tourist offices or cultural information points in the cities you visit?					
When you visit a city, do you take guided tours?					
When you are looking for information about the cultural heritage of cities, do you do it through online searches or virtual resources?					
Do you use any APP (mobile application) to increase your knowledge about cultural heritage?					
Do you consider that during your educational stage you received enough knowledge about cultural heritage?					
Do you enjoy increasing your knowledge of cultural heritage?					
Do you know the cultural heritage of the city where you are? (1: Not at all, 2: A little, 3: Somewhat, 4: Quite a bit, 5: A lot)					

When you are looking for information about the cultural heritage of cities, you do it through:

- Books ☐Yes ☐No
- Specialized guides in paper format ☐Yes ☐No
- Internet ☐Yes ☐No
- Others: _____

III. Project

Do you know Erasmus +? ☐Yes ☐ No

Have you visited the website of the Gymkhana 5.0 project? ☐Yes ☐ No

Have you visited the profiles on Social Networks of the Gymkhana 5.0 project? ☐Yes ☐ No

Evaluate from 1 to 5 (1 being the lowest note and 5 the highest note)

	1	2	3	4	5
Did you get enough information about the project?					
The quality of the information is good					

IV. Gamification as a non-formal methodology

Do you know gamification as an educational tool?

☐Yes ☐ No

Have you used gamification as an educational tool before?

☐Yes ☐ No

Do you think that the "game" as a means of learning is a suitable tool to increase knowledge?

☐Yes ☐ No

Do you think that "playing" as a means of learning is a motivating tool?

☐Yes ☐ No

Do you know virtual tools to increase your knowledge about cultural heritage?

☐Yes - Could you name any? _____

☐No

V. Expectations

Do you think this game will expand your knowledge about the city?

☐Yes ☐ No

What are your expectations?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Final evaluation form - Participants in the testing of the app

I. Participant information:

Number: _____

II. Technical and quality aspects of the APP

To what extent do you agree with the following statements? (1: strongly disagree, 2: disagree, 3: neutral, 4: agree or 5: strongly agree)

	1	2	3	4	5
The APP is easy to find in the Play Store.					
The information that appears in the Play Store is clear and adequate I was					
able to download the application without problems					
The video tutorial is helpful					
The gameplay of the application is correct and intuitive.					
The language used in the application is easily understood.					
The button functions are clear (exit, information, back, following, ...)					
I felt comfortable using this application					
The images used in the application are adequate.					
Graphics and images are attractive.					
I found this APP easy to use					
As for the accessibility options for people with disabilities, did they suit your needs?					
I think the APP works smoothly.					

Did you experience any technical problems with the app during the activity?

☐Yes ☐ No

If yes, please describe the following points.

Description of the problem:

.....

.....

.....

.....

Device model that suffered the problem:

_____

III. Game quality: (Palencia)

To what extent do you agree with the following statements? (1: strongly disagree, 2: disagree, 3: neutral, 4: agree or 5: strongly agree)

	1	2	3	4	5
The history of the game is interesting.					
The story of the game is engaging and motivating.					
The game has adequate information about the heritage to solve the puzzles.					
I found the puzzles in the game very difficult. I found					
this game stimulating and immersive. The game is					
confusing.					
The gymkhana has been difficult to complete					

IV. Route / Route

To what extent do you agree with the following statements? (1: strongly disagree, 2: disagree, 3: neutral, 4: agree or 5: strongly agree)

	1	2	3	4	5
This route is accessible to me					
The length of the path is adequate.					
The places visited are representative of the cultural heritage of the city.					
The distance between the different places is adequate.					

V. Knowledge about heritage

To what extent do you agree with the following statements? (1: strongly disagree, 2: disagree, 3: neutral, 4: agree or 5: strongly agree)

	1	2	3	4	5
My level of knowledge about the cultural heritage of the city has increased					
I believe that the methodology of this project favors the acquisition of knowledge about cultural heritage The					
information offered on each of the selected points of the Gymkhana is adequate					
I consider that gamification is an adequate tool to increase knowledge about cultural heritage					

VI. Other information

What have you learned from this APP:

_____

_____

_____

_____

Evaluate from 1 to 5 (1 being the lowest note and 5 the highest note)

	1	2	3	4	5
My knowledge about gamification as an educational tool has increased					
My knowledge of the European Erasmus + strategy has increased					
The Gymkhana met my expectations. I would like to do					
this experience again. I would recommend this application					
to my family and friends. I had fun during the experience					
I think the total duration of the Gymkhana is correct. How					
would you rate the application?					

Would you like the application to have more locations available?

☐Yes ☐ No

Would you like to know more about the game?

☐Yes ☐ No

If the above answer is yes, please provide us with your email address:

_____

Do you have any suggestions to help us improve the game?

_____

_____

_____

_____

_____

_____

_____

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GYM KHA NA 5.0

Cultural Heritage for Youth

METHODOLOGICAL MANUAL

You can download the manual, the tookit and see the videos on the project's website:

www.gymkhana.infoproject.eu

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Consejo de la Juventud de Castilla y León

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