

HERITAGE
AT
PLAY



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Xandobela | Educación e cultura
Nerea Couselo Fernández
María Jesús (Chus) Caramés Agra
www.xandobela.info | info@xandobela.info

La corte della carta
(Momò) Monica Patrizia Allievi
Silvia Spagnoli
Annamaria Penone
Cristina Vignati
Mattia Olari
Simone Rodio
Giuseppina Casali
www.lacortedellacarta.it | info@lacortedellacarta.it

APDP_Associação para o desenvolvimento de Pitões
Elisabete Carrito
Ana Margarida Paiva
Lúcia Jorge
apdpitoes@gmail.com

Asociația Universitur
Anca Tudoricu
Eliza Donescu
Doina Daniela Dumbrăveanu
Sabina Grădinaru
www.universitur.ro | universitur@gmail.com

Sacauntos Cooperativa Gráfica
Diniz F. Cabreira
<http://sacauntos.com/> | desenho@sacauntos.com

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PRESENTATION

LUDAMUS! PROJECT

Ludamus! was born in response to the need to exploit the opportunities offered by game-based learning methodology and strategies to disseminate and promote European cultural heritage.

Our mission was to develop and renew mechanisms and techniques to promote European cultural heritage within society, with the aim of training workers from diverse social, cultural, and institutional contexts in the use of game-based learning strategies.

Our starting point was to reimagine the philosophy and strategies based on social research, non-formal education, game design and user experience technique design as innovative assets in the dissemination of cultural heritage and as a complement to the widespread strategies of protection and exhibition.

This mission was materialized in a 24-month action plan devised as a unitary research-training-action strategy in which:

- We analysed and mapped game-based experiences that promote cultural heritage throughout Europe.
- We developed a bidirectional teaching-learning process between the partner entities according to the corresponding specialization of each organization through the training "Playing with cultural heritage" and online tutorials. The specialisations refer to: heritage identification and selection techniques, game-based tools and techniques, performing and scenography techniques, graphic techniques to ensure the accessibility and the replication of the games
- We implemented an ambitious experimenting process to design, develop and evaluate game-based strategies in every local community in collaboration with the network of local partners of each organization, using a multitude of formats and supports. A total of 9 game-based experiences were designed that are available on the project channels to be used, replicated and / or adapted by those who wish so.
- As a final result, we developed this methodological guide "Heritage at play" which aims to detail the steps for designing and developing strategies / game-based experiences for the dissemination of cultural heritage while claiming at the same time its social value.



WHO ARE WE?

XANDOBELA

In [Xandobela | Educación e Cultura](#) we work in the old fields of culture and interpersonal relationships, starting from the values and methods offered by non-formal education, promoting an inclusive, creative, and playful attitude. We are people educated in the Galician associations environment, with experience in voluntary cultural work in different programs and environments, and with extensive training in pedagogy, social education, socio-cultural animation, leisure activities development, and non-formal education.



In particular, we promote reading, writing, language, culture, intangible heritage, arts, and games, exploring their playful, expressive and creative potential, and combining enjoyment with learning and cultural dissemination. We have developed many projects over the years, thus specializing in the design of innovative, participatory and creative projects. Little by little, we created our own methodology – simple, yet highly effective formulas in achieving the objectives of each project.

SACAUNTOS

[Sacauntos Cooperativa Gráfica](#) offers all services for the world of publishing, design, and printing. We believe in the added value provided by being linked to the cultural scene and in working personally and close to our customers.



Having our own publishing label — Urco Editora, which specializes in fantasy novels, science fiction and horror in Galician language — we are well aware of the sector’s problems. At the same time, because we also run our own print shop, we can do the necessary tests and experiments to better develop projects. This first-hand knowledge at the two ends of the production chain means that intermediate elements, such as the design department, can make proposals specially tailored to our clientele that are both original and technically feasible.

Sacauntos’ members come from a broad spectrum of social, cultural and linguistic activism, with “street” experience on all these fronts. At the same time, our formal education is very broad — we have people who studied physics, computers, philology, chemistry, pedagogy and anthropology. We think that this infrequent combination of scientific and humanistic knowledge together with more than a decade of experience gives us creativity and flexibility in thinking.

Out of self-interest, we work and seek to work with many companies, entities and people linked to the world of culture, associations and activism. We like to be part of their projects, to help make them viable and, in this way, to have the privilege of seeing our work transform the world.

LA CORTE DELLA CARTA

La Corte della Carta is a cultural association, an artistic laboratory and an ideas incubator created to explore paper as a medium in arts, crafts, theatre and education. Born in Milan in 2008, the association has been working

with libraries, schools, recreational areas, municipalities and other associations and cooperatives of Lombardy. The methods we use are animation, performances and workshops, and our members are librarians, artisans, teachers and actors.

We chose to call ourselves "The Paper Court" because the division of tasks in a Royal Court ensures that the courtiers can share moments through theatre workshops and other playful and creative activities, experiencing both the versatility of paper as a medium and each other's skills.

We chose paper because it is both a poor and a rich material, making it accessible to everyone, from small villages to big cities: this versatility allows us to work both on recovering fading customs in a big city like Milan, and on arts and crafts leading to the creation of artisanal objects, while also allowing us to be playful and find the time to play.

Paper hides stories that can be told, read, performed, written or drawn, it hides objects waiting to become characters of a story. Puppetry is of particular interest to the members of our association, who trained in this field by participating in various workshops, including those promoted by Teatro del Corvo with Natale Panaro, Bruno Leone, Tinin Mantegazza, Albert Bagno, and Gigi Gherzi with Teatro degli Incontri. Then came the happy encounter with Peter Schumann's Bread and Puppet Theatre and all of these encounters nourished our love for "simple" materials used as "storytellers".

Pedagogy, art and crafts are fields we wish to investigate and experience, contaminating ourselves and the places and cities where we live.

ASSOCIAÇÃO PARA O DESENVOLVIMENTO DE PITÕES

A APDP – Associação para o Desenvolvimento de Pitões – was created in February 2015 and arose from the need to promote activities and develop projects aimed at the preservation of the local intangible heritage. APDP aims to promote the culture of the people of Pitões, while motivating and involving the local community. In addition, it aims to create an appropriate infrastructure that will address the characteristics of the local population and future events.



The population of Pitões has some unique and very specific features. This is due to the fact that the Pitões das Júnias village is situated at an altitude of 1.200 meters, in the far north of Portugal, in Peneda-Geres National Park, municipality of Montalegre, Barroso region, Trás-os-Montes.

Furthermore, the harsh winter climate and the consequent immigration contributed to the conservation of the small population of this village. Its origins date back to the 9th and 11th centuries and are very similar to the origins of the Santa Maria das Júnias Monastery.

UNIVERSITUR

Universitur is a non-profit organisation born in 2011 in Bucharest, Romania. Our mission is to create civic duty, promote inclusion and equality and teach volunteers new skills through non-formal education. We aim at fostering youth and young adult participation and raising awareness among people of all ages about key issues faced in today's world.



Our members have various backgrounds, such as Geography, Tourism, Photography and Education, but were brought together by our love for non-formal education and various forms of participatory theatre, such as Labyrinth Theatre, Image Theatre and Theatre of the Oppressed. Some of our members had the privilege of participating in the first Labyrinth Theatre performance in our country and pursued the methodology in a learning by doing approach, while participating in its dissemination in Romania and abroad.

Over the years, we developed and have been partners in many projects with a strong social impact. We collaborated with several associations on a national and international level, sharing and creating non-formal education tools for social inclusion and awareness on topics such as social exclusion, hate speech, gender stereotypes, racism, homophobia, and more.



GUIDE CHARACTERISTICS

This is a methodological guide that aims to be a useful and practical tool, having a didactic, formative, and dynamic approach which integrates the conclusions and learning skills acquired through the development of the LUDAMUS! project. It is based on experience and methodology tested in practice for the design and development of games and recreational experiences for the promotion of cultural heritage.

What we aimed with this guide is that any entity or person interested in experimenting with the methodology detailed could develop experiences of cultural heritage dissemination based on games, following the technical guidelines that are described in depth and in great detail. It is a structured and practical guide, the contents of which are organized in two general sections:

In a first section, theoretical and methodological issues are addressed through three different thematic blocks:

- The first thematic block addresses the theoretical issues around cultural heritage, its definition and characteristics, and the basis for its interpretation.
- The second thematic block focuses on the methodology for the design of ludic experiences and games of all kinds, with a special focus on providing the reader with resources and tools to create game projects from scratch.
- Finally, in the third thematic block, a series of recommendations and exercises are proposed to create interactive ludic installations, where the basic materials that can be used with their rich potentialities are detailed..

The second section includes a presentation of nine game experiences designed and developed throughout the Ludamus! project, as an essential part of the practical training experienced by the five partner organizations. These experiences are conceived as a very valuable pedagogical material, because, in addition to being a source of motivation and inspiration for all those who read them, they fulfill a fundamental formative and evaluation function. Therefore, in this part the general pragmatic orientations given in the first section are reviewed, questioned and adapted, so that the reader can easily perceive the open and transferable character of the methodology with which we have worked in LUDAMUS! project. In addition, the section includes games or ludic experiences that can be used freely, replicated totally or partially or adapted according to the needs of those who want to benefit from them. In this respect, special attention has been paid to detailing how they could be adapted so that they could be fully transferable to any context or purpose.

There are four board games with very varied themes (from the festive heritage around the celebration of the local Carnival, the water cycles, mythology and knowledge of the territory, agricultural heritage and popular architecture, to the promotion of the artistic and historical heritage of a large city) that can be freely downloaded and printed from any home printer to be played and enjoyed. You will also find four live game experiences, with different formats and objectives, but perfectly transferable to other contexts (discovery of urban and rural cultural heritage), and a digital game about the Galician magical heritage.

What are you waiting for? Let's play!

PART A

METODOLOGY FOR HERITAGE DISSEMINATION THROUGH GAMES

THE BASICS ABOUT HERITAGE

1. WHAT IS HERITAGE - DEFINITIONS AND PARADIGMS

Defining heritage is a real challenge since there is a constant debate over the meaning and understanding of the concept. However, the challenge does not necessarily come from its complexity but rather from the multiple perspectives heritage can be addressed. For example, heritage can be a subject for anthropologists, sociologists, tourism practitioners and academics, historians, or cultural executives. Moreover, heritage can be a subject for anyone interested in their own history, values, and pathways: "Heritage is for people; not just for a small minority of specialists and experts, but for everyone." (Howard, 2003:33)

The shift from the traditional process of classifying and defining heritage to a more inclusive, humanistic one has marked the past two decades. Olivier Poisson (2008), UNESCO heritage specialist, stated:

Everything is potentially heritage because everything is loaded with meaning, because everything has been built, developed, crafted, taken over, modernized, redone according to human values that are likely to be ours. The past is dead, and it only survives in our minds. It is only alive in our memory, attached to places, to objects, to works of art that remain before our eyes to be observed.

The reason for which this shift is relevant relates directly to the aim of our project, Ludamus!, that treats heritage as a process "whereby objects, events, sites, performances and personalities, derived from the past, are transformed into experiences in and for the present." (Ashworth, 2012:2)

UNESCO, however, makes a step forward, looking at its transferability and the need for preservation: "Heritage is our legacy from the past, what we live with today, and what we pass on to future generations. Our cultural and natural heritage are both irreplaceable sources of life and inspiration." (UNESCO World Heritage Centre - World Heritage, n.d.)

As a practice, heritage is not a recent concept at all. Instead, its interpretation dates back to antiquity when the Greeks visiting Egypt were appointed guides to show them the relics.

In the Middle Ages, the concept of public heritage did not exist yet. However, this is when the first notion appeared of safeguarding objects with a different value, other than material: relics of the saints, regalia (royal symbols), book collections of royal libraries, archives of royal and religious institutions and ancient buildings. As mentioned by Howard (2003), the cult of relics was essentially a heritage movement that involved protecting, conserving, selling and faking artefacts from the past, which were said to give special powers to their possessors. During Renaissance, the appreciation of heritage was not shown through conservation but rather by emulation of building style. During this period, the leading State authorities – the Monarchy and the Church – did not protect such objects and monuments; instead, they were free to destroy them if they served a political or ideological purpose.

The official notion of safeguarding (which contributed to the evolution of the concept of public heritage) appeared around the time of the French Revolution (1789-1799). In 1783, the French Enlightened asked the State to stop destroying ancient monuments without having an official investigation first, the claim being supported by the newspapers.

The safeguarding movement became stronger during World War II due to the fact that the political and social turmoil led to the destruction of cultural treasures all over Europe. Art historians and museum directors asked the Allies to create an organization affiliated with the military to identify and protect European monuments and art. In 1943 the Allies established the "Monuments, Fine Arts, and Archives Section" - known as the "Monuments Men" Unit (350 people from 13 countries). Without the work of these curators and professors, tens of thousands of priceless works of art would have been lost to the world forever. (Morrison, 2014)

After WWII, 44 countries from all over the world participated in the United Nations Conference for the establishment of an educational and cultural organization (ECO/CONF) in November 1945. This is how UNESCO was born – an organization that aimed to establish the "intellectual and moral solidarity of mankind" and, in so doing, prevent the outbreak of another world war.

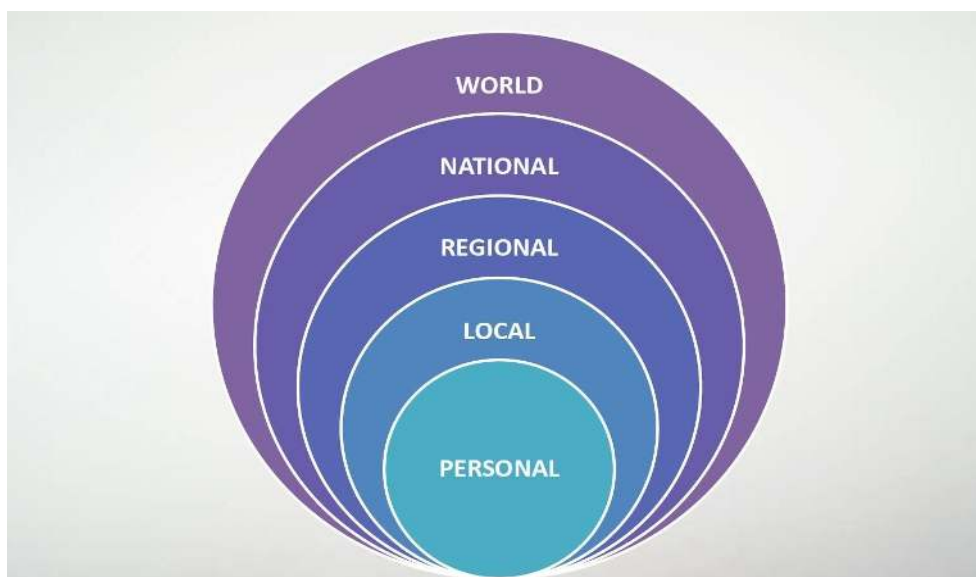


Fig. 1 – Heritage types by representativity

2. HERITAGE TYPES AND CATEGORIES

The moment in which a place receives recognition as a heritage 'site' from an official organisation (such as UNESCO) or directly from the community, its relationship with the landscape in which it exists and with the people who use it immediately changes. It somehow becomes a place, object or practice 'outside' the everyday, something to appreciate, value and capitalise. Moreover, as John Carman (2002) notes, heritage is created in the process of categorising. These places gain a special position and, consequently, a series of obligations, both legal and 'moral', arising from their inclusion on this official or less official register.

According to the degree of representativity, we can speak about personal, local, regional, national or world heritage.

Obviously, the greater the representativity, the more "official" the status and the bodies who manage the heritage are. UNESCO, for instance, is in charge of the world heritage list, having developed its own criteria that the aspiring heritage sites have to meet in order to be included in it (see next chapter). However, UNESCO has a particular classification of heritage, starting from tangibility as the main feature and moving towards the thematic (see Fig 2)

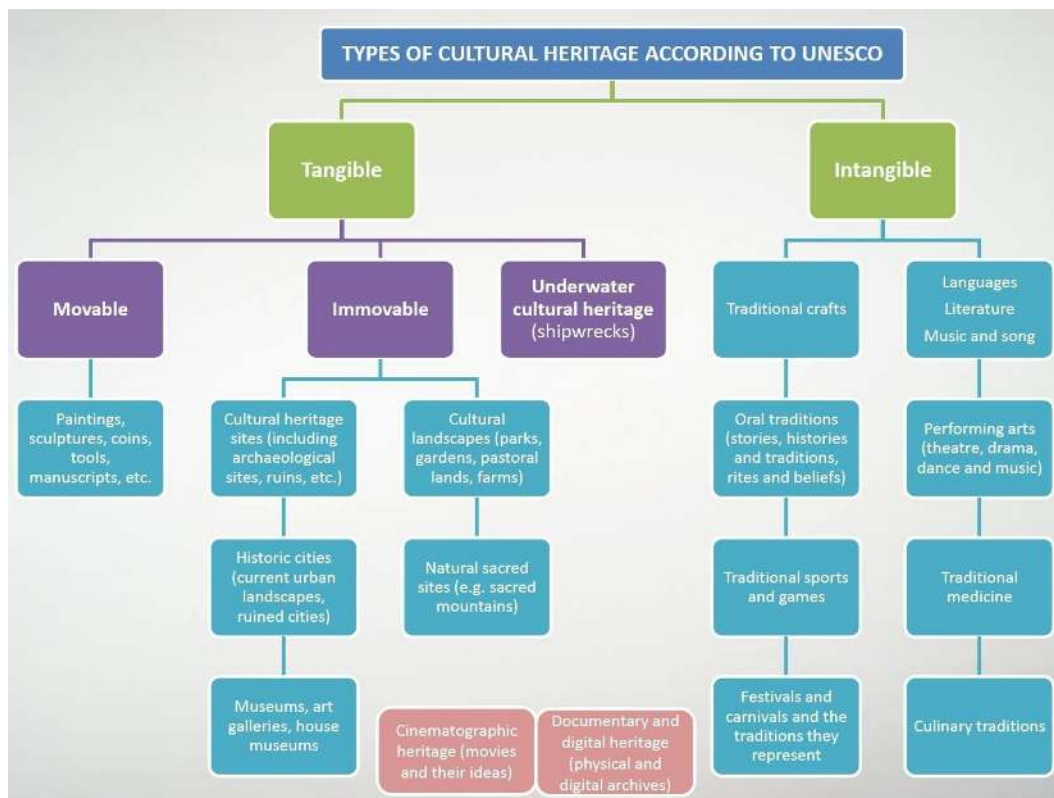


Fig. 2 – Types of cultural heritage according to UNESCO - adapted from the content of *Heritage: Critical Approaches* by Rodney Harrison, 2013 and *United Nations Year for Cultural Heritage Information Kit*, 2002

3. UNESCO, WORLD HERITAGE SITES AND INTANGIBLE CULTURAL HERITAGE

UNESCO is the United Nations Educational, Scientific and Cultural Organization and its main aim is to build peace through international cooperation in education, sciences and culture.

3.1. WORLD HERITAGE SITES

To be included on the UNESCO World Heritage List, sites must be of outstanding universal value and meet at least one out of ten selection criteria. The criteria are explained in the Operational Guidelines for the Implementation of the World Heritage Convention, which, besides the text of the Convention, is the primary working tool on World Heritage.

The ten criteria have been in effect since 2004.

Criteria for selection of a World Heritage Site		
Type of heritage	Criteria	Examples
C U L T U R A L	(i). To represent a masterpiece of human creative genius;	Only (i) • Australia : Sydney Opera House • Cambodia : Temple of Preah Vihear • India : Taj Mahal (i) + other criteria • Galicia: Santiago de Compostela (old town) • Vatican
	(ii). to exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town planning or landscape design;	Only (ii) • Romania: Monastery of Horezu (i) + (ii) + other • Galicia: Santiago de Compostela (old town) • Vatican
	(iii). to bear a unique or at least exceptional testimony to a cultural tradition or to a	Only (iii) • Germany: Caves and Ice Age Art in the Swabian Jura Mountains • Japan: Hidden Christian Sites in the

<p>C U L T U R A L</p>	<p>civilization which is living or which has disappeared;</p>	<p>Nagasaki Region</p> <p>(iii) + (iv)</p> <ul style="list-style-type: none"> • Portugal: Monastery of the Hieronymites and Tower of Belém • Cuba: Archaeological Landscape of the First Coffee Plantations
	<p>(iv). to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;</p>	<p>Only (iv)</p> <ul style="list-style-type: none"> • Italy : Ivrea, industrial city of the 20th century • Romania : Villages with Fortified Churches in Transylvania • Romania: Wooden Churches of Maramureș <p>(iii) + (iv)</p> <ul style="list-style-type: none"> • Portugal: Monastery of the Hieronymites and Tower of Belém • Cuba: Archaeological Landscape of the First Coffee Plantations
	<p>(v). to be an outstanding example of a traditional human settlement, land use, or sea use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;</p>	<p>Only (v)</p> <ul style="list-style-type: none"> • Italy : Le Colline del Prosecco di Conegliano e Valdobbiadene • China: Cultural Landscape of Honghe Hani Rice Terraces <p>(v) + (vii) + others</p> <ul style="list-style-type: none"> • Greece: Meteora • Italy: Venice and its Lagoon
	<p>(vi). to be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance.</p>	<p>Only (vi)</p> <ul style="list-style-type: none"> • Japan : Hiroshima Peace Memorial • Poland : Auschwitz Birkenau German Nazi Concentration and Extermination Camp 1940 1945) <p>(vi) + others</p> <ul style="list-style-type: none"> • Santiago de Compostela (old town) + Camino de Santiago (in Spain and France) • Portugal: Tower of Belém in Lisbon

		<ul style="list-style-type: none"> • Italy: Venice and its Lagoon
N A T U R A L	(vii). to contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;	<ul style="list-style-type: none"> • Mexico: Monarch Butterfly Biosphere Reserve (the most dramatic manifestation of the phenomenon of insect migration , from as far as Canada)
	(viii). to be outstanding examples representing major stages of earth's history, including the record of life, significant ongoing geological processes in the development of landforms, or significant geomorphic or physiographic	<ul style="list-style-type: none"> • Italy: Mount Etna - one of the world's most active and iconic volcanoes, and an outstanding example of ongoing geological processes and volcanic landforms
	(ix). to be outstanding examples representing significant ongoing ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;	<ul style="list-style-type: none"> • Europe: Ancient and Primeval Beech Forests of the Carpathians and Other Regions (bosques primarios de haya / foreste primordiali dei faggi)
	(x). to contain the most important and significant natural habitats for in situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.	Only (x) <ul style="list-style-type: none"> • Mexico: Whale Sanctuary of El Vizcaino (x) + others <ul style="list-style-type: none"> • Romania: Danube Delta (vii) + (x) • Australia: Great Barrier Reef (vii) + (viii) + (ix) + (x) • Ecuador: Galápagos Islands (vii) + (viii) + (ix) + (x) • USA: Grand Canyon National Park (vii) + (viii) + (ix) + (x)

Fig. 3 – Criteria for selection of a World Heritage Site

3.2. SAFEGUARDING INTANGIBLE CULTURAL HERITAGE

One of the objectives of classifying heritage focuses on the need for its safeguarding. Intangible heritage, due to its perishability, it is easily endangered by the rhythm with which the entire mankind moves ahead. Therefore, safeguarding has to focus on practices, representations, expressions, knowledge, skills as well as the instruments, objects, artefacts and cultural spaces that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. Intangible heritage is transmitted from generation to generation; it is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity. (UNESCO, 2003)

UNESCO uses three main tools for safeguarding intangible cultural heritage, as shown in the figure below.

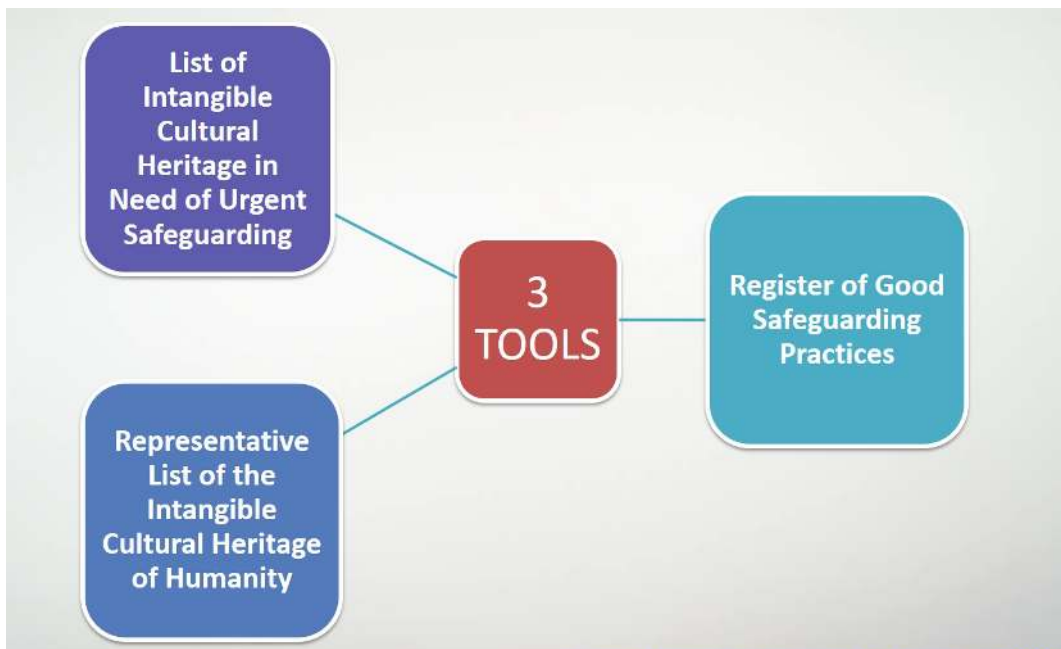


Fig. 4 – UNESCO tools for safeguarding intangible cultural heritage

3.2.1 REPRESENTATIVE LIST OF THE INTANGIBLE CULTURAL HERITAGE OF HUMANITY

This list contains intangible heritage elements that help demonstrate the diversity of intangible cultural heritage and raise awareness about its importance.

Examples:

- Art of Neapolitan 'Pizzaiuolo' (the art of making Neapolitan pizza - Italy)
- Opera dei Pupi - traditional Sicilian puppet theatre (Italy)
- Fado music (Portugal)
- Doina music (Romania)
- Flamenco music and dance (Spain)
- Mediterranean diet (Cyprus Croatia Spain Greece Italy Morocco Portugal)

Criteria

(all are mandatory)

- **R.1:** The element constitutes intangible cultural heritage as defined in Article 2 of the Convention.
- **R.2:** Inscription of the element will contribute to ensuring visibility and awareness of the significance of the intangible cultural heritage and to encouraging dialogue, thus reflecting cultural diversity worldwide and testifying to human creativity.
- **R.3:** Safeguarding measures are elaborated that may protect and promote the element.
- **R.4:** The element has been nominated following the widest possible participation of the community, group or, if applicable, individuals concerned and with their free, prior and informed consent.
- **R.5:** The element is included in an inventory of the intangible cultural heritage present in the territory(ies) of the submitting State(s) (ies), as defined in Article 11 and Article 12 of the Convention.

3.2.2 LIST OF INTANGIBLE CULTURAL HERITAGE IN NEED OF URGENT SAFEGUARDING

Inscriptions on this List help to mobilize international cooperation and assistance for stakeholders to undertake appropriate safeguarding measures.

- Browse the list here: <https://ich.unesco.org/en/0001?type=0003#tabs>

Some examples from Portugal:

- Bisalhães black pottery manufacturing process (Louça Preta de Bisalhães) [https://ich.unesco.org/en/USL/bisalhaes black pottery manufacturing process 0199](https://ich.unesco.org/en/USL/bisalhaes%20black%20pottery%20manufacturing%20process%200199)
- Manufacture of cowbells (Chocalhos) [https://ich.unesco.org/en/USL/manufacture of cowbells 0106](https://ich.unesco.org/en/USL/manufacture%20of%20cowbells%200106)

Criteria

(all are mandatory)

U.1: The element constitutes intangible cultural heritage as defined in Article 2 of the Convention.

U.2:

- a) The element is in urgent need of safeguarding because its viability is at risk despite the efforts of the community, group or, if applicable, individuals and State(s) Party(ies) concerned;
(or)
- b) The element is in extremely urgent need of safeguarding because it is facing grave threats as a result of which it cannot be expected to survive without immediate safeguarding.

U.4: The element has been nominated following the widest possible participation of the community, group or, if applicable, individuals concerned and with their free, prior and informed consent.

U.5: The element is included in an inventory of the intangible cultural heritage present in the territory(ies) of the submitting State(s), as defined in Article 11 and Article 12 of the Convention.

U.6: In cases of extreme urgency, the State(s) Party(ies) concerned has (have) been duly consulted regarding inscription of the element in conformity with Article 17.3 of the Convention.

3.2.3. REGISTER OF GOOD SAFEGUARDING PRACTICES

The Register contains programs, projects and activities that best reflect the principles and the objectives of the Convention. It allows States Parties, communities and other stakeholders to share successful safeguarding experiences and examples of how they surmounted challenges faced in the transmission of their living heritage, its practice and knowledge to the future generation. These methods and approaches should be useful as lessons and models that can be adapted to other circumstances, including those in developing countries.

There are 9 criteria that are not all mandatory but must be satisfied as well as possible by the request to join. You can find them here: <https://ich.unesco.org/en/select-for-the-register-00300>

Some examples of good safeguarding practices from Spain:

- Methodology for inventorying intangible cultural heritage in biosphere reserves: the experience of Montseny
- Revitalization of the traditional craftsmanship of lime making in Morón de la Frontera, Seville, Andalusia
- Centre for traditional culture - school museum of Pusol pedagogic project

However, safeguarding in the long term is impossible without disseminating the meaning and the importance of heritage; therefore, it is essential to perform a type of heritage interpretation in order for us to better interact with it.

4. HERITAGE INTERPRETATION - HOW TO "COMMUNICATE" HERITAGE

4.1 THE CHALLENGES OF FINDING A "UNIVERSAL LANGUAGE" FOR THE AUDIENCE

Given that heritage is mainly place-specific or at least context-dependent, it is essential to provide a certain understanding to the people to whom it relates and to the ones interested in it. Therefore, a particular field of practice was born: heritage interpretation.

Interpretation refers to the full range of potential activities intended to heighten public awareness and enhance understanding of cultural heritage sites. These can include print and electronic publications, public lectures, on-site and directly related off-site installations, educational programs, community activities, and ongoing research, training, and evaluation of the interpretation process itself. (ICOMOS, 2008)

Interpretation more specifically consists of learning embedded in planned activities that are not explicitly designated as learning, but which contain an important learning element. (Colardyn and Bjornavold, 2004)

Taking into consideration that heritage is a complex and debatable concept, its interpretation could not be any less difficult to design and produce. Moreover, "heritage interpretation is a social and cultural process because, like all forms of interpretation, it cannot be limited to functional definitions, practical manuals, communication techniques, informal learning, planning approaches, multi-media performances and so on. Across the many disciplines, interpretation has a variety of meanings and applications: explication and elucidation is but one." (Staiff, 2014:3)

Therefore, the challenges come from multiple directions. First of all, understanding and synthesising the meaning of the heritage to be interpreted is a tremendous process per se. Heritage is related to the past, to memory, to emotions, and there are certain situations in which people have not come to terms with it. How could contested identities be presented without generating conflicts and negative reactions? Effective interpretation should never give in to the "danger of a single story"¹ but should provide different perspectives on the same issue.



Fig. 5 – How we interact with heritage - adapted from the content of "Re-imagining Heritage Interpretation: Enchanting the Past-Future" (Prologue), 2014, Russell Staiff

¹ https://www.ted.com/talks/chimamanda_ngozi_adichie_the_danger_of_a_single_story

Type	Activity	Pros	Cons
GUIDED / PERSONAL INTERPRETATION	guided walks	personal contact is generally considered to be effective provided material and presenter are credible and accurate;	requires training and support programme; can be weather dependent; can be expensive to produce and might require the support of personnel specialized in attracting funding.
	talks		
	presentations	can be entertaining and memorable;	
	roving interpreters	audience has a higher level of interest and attention because they have usually chosen to participate;	
	drama		
	activity programmes	can be used together with other interpretation techniques in order to reinforce messages;	
	special events		
	volunteer and concessionary interpretation activities	can involve volunteers and engage communities with sites and conservation; can be tailored to particular audiences.	
SELF GUIDED INTERPRETATION	panels	wide range of materials and productions techniques can be used;	durability will vary with construction materials and method and setting; audio-visual / interactive displays generally require more maintenance than static panels; visitor centre displays can have a higher development cost (than static panels), but are generally very popular with visitors; outdoor media is susceptible to vandalism and extreme weather conditions or prolonged exposure to the elements.
	art		
	audio	outdoor media reaches a high number of visitors and it usually requires no user cost;	
	multimedia		
	audio-visual	there is usually a low production cost relative to the life of the asset;	
	props		
	visitor centre displays (interactive models, short audio or audio-visual presentations, multimedia)	publications can provide off-site detailed information about sites or topics and can reach a wide audience, particularly when distributed electronically;	
	publications	materials distributed electronically are inexpensive to update.	

Fig. 6 – Guided and self-guided interpretation of heritage - based on the content of *Interpretation—Making a Difference on Purpose* (2013), Sam H. Ham

Secondly, finding a "common language" for multiple target groups is, again, a real challenge. We are diverse; we react and respond to different stimuli, which means that the "interpreters" should dedicate a lot of time and expertise to understanding their beneficiaries' behaviour. For instance, interpreting heritage for children needs specialists to design content and context especially customised for their level of understanding and attention span (see Tilden's principles – Fig. 7).

Moreover, interpretation should be constantly adaptable to the preferences of the target group. The last three decades that were marked by unprecedented technological advances brought along significant tourist sophistication and a new perspective on being entertained.

Another challenge refers to involving the local community in the interpretative process. There are situations in which the local community is unaware of the significance of its own heritage due to multiple reasons – identity loss caused by political and social changes, lack of education and access to information etc. Therefore, before interpreting it to the visitors, it is essential for the local community to reach a certain degree of understanding and appreciation. Otherwise, the meaning of safeguarding heritage is lost.

TILDEN'S PRINCIPLES OF INTERPRETATION
1. RELATE! Any interpretation that does not somehow relate what is being displayed or described to something within the personality or experience of the visitor will be sterile.
2. REVEAL! Information is not Interpretation. Interpretation is revelation based on information. But they are entirely different things. However, all interpretation includes information.
3. Interpretation is an art , which combines many arts, whether the materials presented are scient.
4. PROVOKE! The main aim of Interpretation is not instruction, but provocation.
5. Interpretation should aim to present a whole rather than a part , and must address itself to the whole man rather than any phase.
6. Interpretation addressed to children (say, up to the age of 12) should not be a dilution of the presentation to adults, but should follow a fundamentally different approach. To be at its best it will require a separate program.

Fig. 7 – Tilden's principles of interpretation

4.2 GUIDED AND SELF-GUIDED INTERPRETATION OF HERITAGE

According to the type of involvement of the "beneficiary", there are two distinct categories of interpretation: self-guided and guided (Fig. 6). Obviously, each of them includes interpretative infrastructure, meaning physical installations, facilities, and areas at or connected with the heritage site that may be specifically utilized for the purposes of interpretation and presentation, including those supporting interpretation via new and existing technologies.

No matter the type of interpretation, in order to be efficient, it needs to respect the six principles proposed by Freeman Tilden (1967) that became the cornerstone of this practice (Fig. 6).

In conclusion, interpretation means...

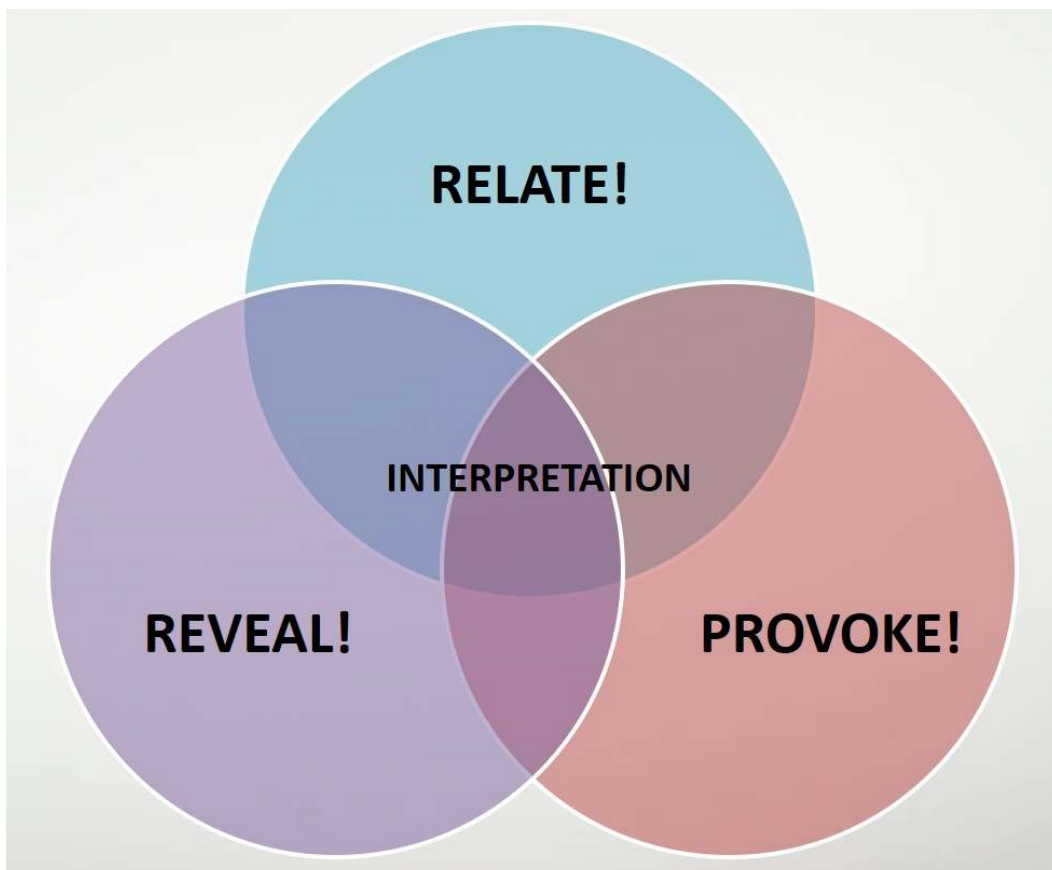


Fig. 8 – Interpretation according to Freeman Tilden

Choosing tabletop games for heritage interpretation is justified due to the fact that:

- They have multiple reading levels - therefore, they can target various groups.
- They are entertaining and still "fashionable"- especially during the lockdown the sales of board games and jigsaw puzzles went up; (The Guardian, 2020)

- They are tools for non-formal and even informal education – you are not aware of learning, you associate playing with relaxation and free time;
- They provide a wide range of mechanics, therefore there are infinite possibilities to tell stories;
- The same game can have multiple objectives – it can contribute to informing, raising awareness or even calling to action for heritage safeguarding;
- They can have numerous versions, reaching a wider audience – tabletop games, online games, mobile apps, Print & Play;
- They are sustainable – they are transferrable (we usually lend and borrow board games), they are more likely to be bought and kept than a brochure or traditional promotional materials, and they are not site-specific (can be played in other contexts).

Moreover, games are incredible tools that can have a significant impact on promoting a sustainable cultural life of communities.

Our experience in the field helped us draw the conclusion that heritage in poor condition was the direct consequence of the lack of appreciation, both from the local community and the authorities. One of the causes was related to representativity – nobody felt represented by that particular heritage. Through games, the interaction with heritage is fostered in a playful manner, which instantly generates appropriation and place attachment. Therefore, the "playground" becomes a safe space to be appreciated and respected since it stimulates the sought-after sense of belonging. Pride along with the sense of ownership ultimately lead to the preservation and promotion of heritage, which are the pillars of sustainable cultural tourism.



Fig. 9 – The path to sustainable cultural tourism

Let's imagine a world where kids and adults become aware of their heritage at play. Do you think they could ever contribute to the destruction of a playground? I believe not because...

Through interpretation, understanding; through understanding, appreciation; through appreciation, protection ...

(Tilden, 1957:38)

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GAME DESIGN & CREATION: STEP BY STEP

1. STARTING THE GAME

Faced with the challenge of disseminating and valorizing cultural heritage in our society, we are met with different formulas that have proven effective throughout history: legal protection measures, musealization, converting it into a tourist destination or attraction, inventorying it, etc. However, these are all actions that, on their own, do not help to connect people to their own culture in a participatory manner, but rather enable them to observe these contents from the outside, without participating or feeling like they're a part of it. The progressive increase of detachment from the components that make up their own culture, the fracture of the natural chain of intergenerational transmission, the devaluation of cultural heritage on the social and media level, cultural standardization and globalization... these are all sufficient reasons to justify the need to address the issue from a more innovative and participatory perspective.

From this point of view, games and game-based methodologies offer opportunities to explore and valorize that should not be overlooked: resources and methods widely tested in the field of non-formal education, increasingly implemented in formal educational contexts and also in the search for other objectives beyond academics and beyond education during leisure and free time, such as facilitators for lifelong learning for all ages. We should also not forget that game itself is part of culture and is present throughout history and all civilizations, therefore reinforcing its relevance and validity in shaping humanity and in the perpetuation of society's values. The importance of play in children's learning and integral development is a widely studied topic from various perspectives and under various aspects, but in recent times there is already talk of a new discipline of study – ludology, dedicated to the research, creation and experimentation of games and the act of playing them as a cultural phenomenon from the perspective of social sciences, computer science, the humanities and other areas of knowledge.

However, the narrative we often build as adults is that playing is a purely childish activity and it is also filtered through the negative connotations that put playing in opposition to putting in effort, to being serious, to having discipline, to learning..., and they even put in probable relationship with the harmful effects that games can have on people's lives.

While it is true that many of these myths are now overcome, we propose an overview of the most widespread ideas on the relationship between playing and learning:

- Games are for children: this belief is relatively recent but widely accepted. The reality is that adults have been gradually abandoning the habit of playing as the changes caused by the industrial revolution and the consolidation of capitalism forced people to base their subsistence on productivity, taking on increasingly large workloads and, consequently, having very restricted and limited time for leisure activities. Games and playing were therefore redefined as mainly a childish activity that one should do less of with age, as if it were an evolutionary phase to outgrow.
- Games are a waste time: following the logic of the previous myth, it could be said that while you are playing, you are not producing anything or creating any added value, although the benefits of playing have been demonstrated over and over again, both on a physical, social and cognitive level, as well as a tool for the transmission of values and of social and cultural content.
- Games distract from learning. Playing is not learning. You don't learn anything by playing: on the contrary, you learn a lot by playing! You learn to socialize, to work in a team, you adhere to norms and rules, you learn to solve problems... and furthermore playing is an ideal tool to facilitate learning of all kinds and to build knowledge in a way that is completely based on experimenting and learning by doing. Hence, the so-called game-based learning (GBL) - a methodology that is increasingly implemented in all educational contexts.
- Playing is the opposite of making an effort: the idea that a game is a pleasant activity where enjoyment and fun prevail is not a justified reason to exclude the concept of effort per se. In fact, a game is a very serious matter for the people playing it, and they will strive to succeed, they will give their best, seek to constantly improve themselves, and put in their best effort.
- Games generate addiction: here we see it necessary to call out the reductionist and prejudicial use of the term game to betting platforms and also to the specific problem associated with video game addiction, and to mark a clear and unequivocal differentiation. There is research that seeks to analyse the relationship between gambling and addiction, but again it must be said that playing per se does not generate addiction. Everyone plays and that alone is not why certain people develop an addictive disorder. It is true that games are engaging, but that is because they connect directly with our intrinsic motivation and that, from our point of view, represents more of an opportunity than a threat.
- Lastly, there are preconceived notions about playing and learning that are half-truths and have a double meaning, such as the idea that not everything can be done by playing because there are things that require us to be serious. This much is true: although the meaning of "seriousness" should be more nuanced, introducing game-based tools and strategies in the dissemination of cultural heritage does not rule out other types of more traditional formats at all. With the Ludamus! project we search for the coexistence between a diversity of methods and resources with the aim of promoting and valorizing cultural heritage. Only in this way will more people be reached, whatever their trajectories, their interests, or their connection with culture. The benefits of using games in education do exist and they are many and diverse, but they are not a panacea, and it would be a grave mistake to pretend that games are the solution to the current educational issues and challenges. Furthermore, incorporating game-based stra-

regies is not easy: it requires training, effort and willingness of professionals and organizations, it takes a lot of experimentation, a lot of trial and error, the development of a game culture and, of course, all this needs to be achieved while also fulfilling the general professional obligations and functions.

From here on out we will present an overview of the theoretical and conceptual framework, then describe the methodological foundations of the design of game-based activities. However, before fully committing to the next chapters, we would like to challenge you to experiment, to play and discover first-hand how ludic thinking and a playful attitude can be great tools for learning, because playing and learning are two concepts intrinsically connected with common elements such as curiosity, creativity, taking on individual and/or group challenges, effort and discovery.



2. TERMINOLOGY

2.1. WHAT IS PLAYING?

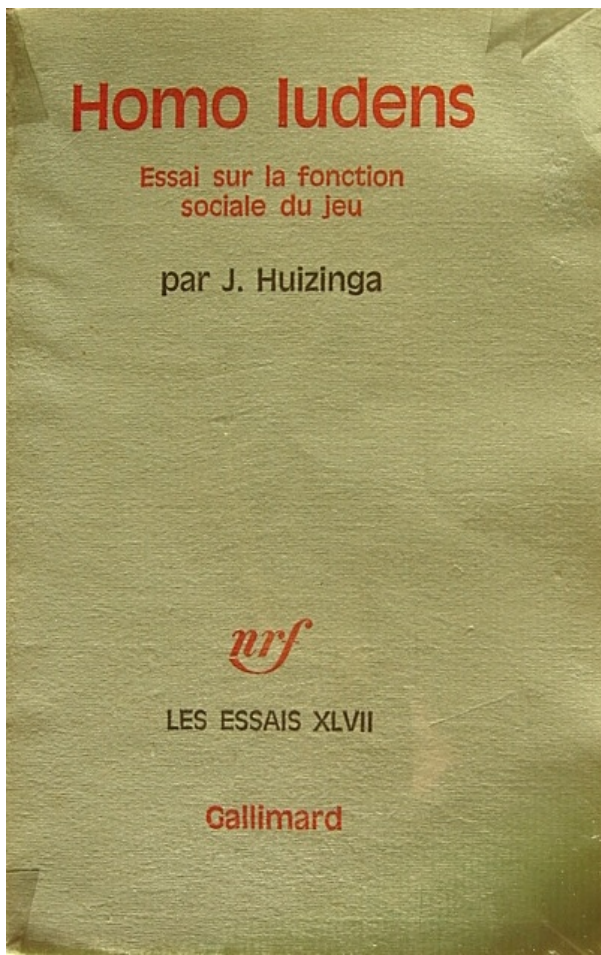
Playing is an enjoyable and recreational activity which is practiced individually or in a group and which requires some ability or skill to be exercised. It does not exclusively belong to childhood and it is part of the culture of all people, of any time or place. Moreover: as the historian Johan Huizinga states in his book *Homo ludens* (1938), the act of playing is even consubstantial to human culture. Playing is as essential to humans as thinking ("homo sapiens") and working ("homo faber"), because we play by nature and freely, because it helps us create experiences and become aware of the world and of ourselves, and because it brings us closer to competition. Culture and games are intimately related and we, as human beings, maintain our capacity to play throughout our entire life.

Much has been written about the characteristics of playing games, but we would like to begin with the information given by a Galician author, one of the main researchers on traditional Galician games: Paco Veiga. In his book *O xogo popular galego*, 2001 (*Traditional Galician Games*) he lists three characteristics that we think perfectly synthesize the most defining characteristics of games:

- A Playing is free and spontaneous. It is not conditioned by reinforcements and external circumstances.
- B Playing produces enjoyment in itself, regardless of any external objectives one might wish to achieve through it.
- C The purpose of any game is playing. There is a predominance of means over ends.

To these three basic characteristics, which are also supported by all other literature written on the subject, we add two other contributions that seem important to complete the definition of playing and that will help us to design our game-based strategies.

One of these contributions belongs to the psychologist Mihaly Csikszentmihalyi ("Flow: The Psychology of Optimal Experience", 1990), one of the pioneering authors in the study of happiness and positive psychology. In his "Theory of Optimal Experience" he talks about "flow" and the "state of flow", and states that people are truly happy when they achieve this state of mind. When in this state, people are totally immersed and concentrated on what they are doing, sense of time is lost, and concern for oneself completely disappears. This happens with playing games, because the immersive nature of games stimulates concen-



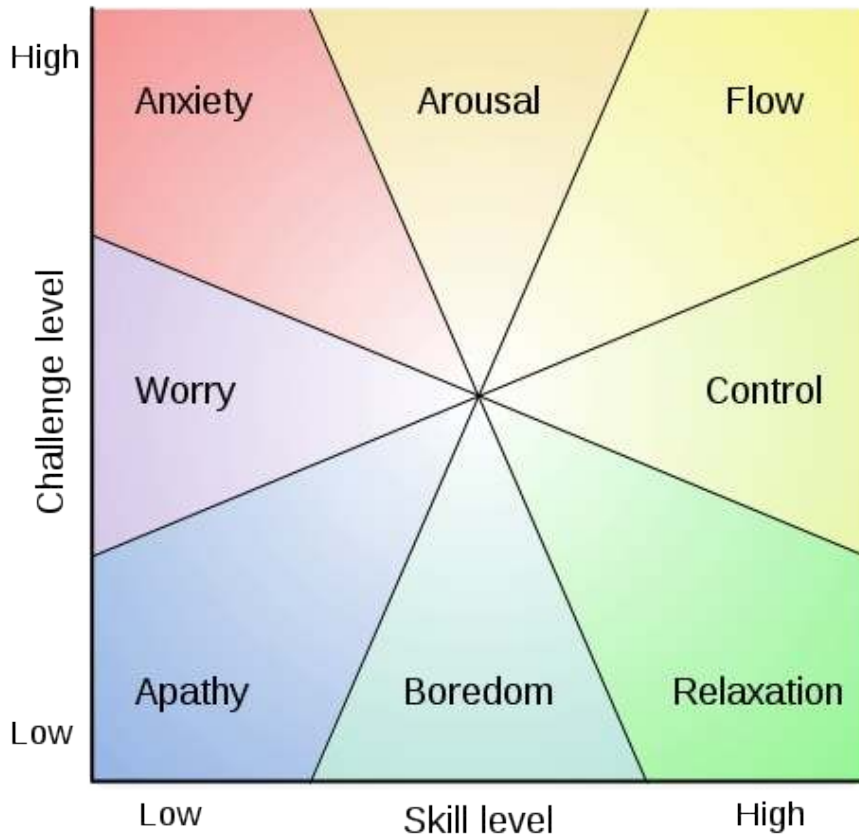


Image by Amber Case based on Csikszentmihalyi's theory

2.2. WHAT ARE GAMES?

Games are created and designed with the sole purpose of entertaining. Here we will be discussing everyday games, board games, video games, etc.

As we have already pointed out, games and playing are a characteristic of the development of humanity, and games in particular are an expression of the culture that creates and plays them.

As evidence of this stands the immense traditional game heritage (intangible and material) of the various cultures and societies that have existed throughout history: traditional games, linguistic, oral and musical games, ludic dances, folk sports, etc. The importance, relevance and significance of games for humanity (like that of other cultural manifestations such as languages, music, oral literature or cooking, to give just a few examples) is made clear by their perpetuation through intergenerational transmission. Most folk games that we know and continue to practice today came to us by being transmitted from generation to generation, standing the test of time, showing their validity and significance for the human species, without mercantile or commercial interests and without any marketing strategies. Surprising!

The statement that games are an essential part of shaping humanity is also underlined by the innovative, creative and creation capacity that is reflected, for example, in the huge number and variety of games that exist today, and above all in the ability to take advantage of the potential offered by new media and formats and also by the development of technological innovation in the service of the gaming industry. This capacity for creativity, innovation and transferability demonstrates the relevance and significance of games in people’s daily lives: if we keep inventing and creating games, it is because they are important to human beings.

There are many categories of games, each emphasizing different criteria, characteristics or elements: board games (according to their physical components, for example: card games, table top, tiles, chips, dice, miniatures, etc.), video games, traditional games, role-playing games, folk games, pre-sports games, escape or breakout games (digital or psychological; escape rooms or breakout games), mystery games with clues or tests, gymkhana, etc. We are not going to dwell much on this because we would never reach the end if we were to list all possible existing categories, but later in the guide we will propose certain types of games that you can design for your projects.



“Children’s games” (1560) by Pieter Bruegel, the elder.

2.3. WHAT IS GAMIFICATION?

Following the definition designer and researcher Sebastian Deterding (2011), “gamification is the use of game design elements in non-game contexts”, meaning in contexts that not naturally and traditionally linked to free and spontaneous play: in the world of

marketing and sales, in organizations, in health, in the workplace, etc. Through gamification, we seek to create a new context of motivation for participation or for maintaining long-term commitment. In the world of sales, the clearest examples have to do with the accumulation of points to get extra services, contests and raffles before purchase, etc. All these actions seek to build long term customer loyalty, increase sales, promote a certain product, company or service, all by using mechanics that are traditionally found in games.

We add this definition to avoid unnecessary confusion: although the term is already widely used, in reality it is often used indiscriminately to describe any initiative that has a minimum link with games. We want to make it clear that applying gamified systems is not playing, it is using some game-based elements for a given non-game purpose, and as such they do not exhibit the rest of the characteristics pointed out above when defining games and playing. However, studies on gamification are extremely useful because they have helped to deconstruct, explore and detail all game components in order to propose different design methodologies that can be transferred (with the relevant adaptations) to the design of our games.

2.4. WHAT ARE SERIOUS GAMES?

We could define them as games created and designed to promote learning of any kind. The objective is external to the game itself (which is why it is “serious”), and there are different typologies depending on purpose and uses, such as the “training games” (video games designed to train a specific skill, such as simulation games, which seek to reproduce a specific reality to rehearse and reinforce behaviours and improve skills), or the so-called “edutainment” (for the school environment and with the aim of transmitting knowledge).

It is a very open concept, as you can see, and its implementation contains an endless number of various and diverse activities. This is the concept that interests us the most in the context of Ludamus! project, because we seek to promote the design of games thinking about our objective to inform about cultural heritage while taking advantage of the positive characteristics of games (fun, discovery, curiosity, pleasure, flow, etc.).

In this context, the game-based learning (GBL) therefore consists of using games as tools for learning by adapting existing ones. This methodology is in accordance with and respects all characteristics associated with games, although the ultimate purpose is learning and the dissemination of certain contents, such as cultural heritage. It allows to offer different experiences and guarantees to motivate people through active participation and acquiring knowledge in a more meaningful way.



2.5, WHAT TYPES OF GAMES CAN WE DESIGN TO PROMOTE CULTURAL HERITAGE?

Although it is an increasingly professionalized world, with this guide and a lot of experimentation you can encourage yourself to start designing your own games. We are not talking about video game design, as it is a very specialized discipline that requires extensive knowledge and training and that exceeds the purpose of this guide. We also chose to exclude role-playing games because, despite their enormous potential, we consider their particular characteristics could not be addressed in this introductory guide.

Some definitions:

Board game: a game that is subject to certain rules that define and limit the actions, components and mission to be achieved. It is normally played with materials that require the support of a table or surface on which to arrange them and players will gather around it, hence its name. Board games have two defining elements: chance and strategy.

Live games: we chose this term to amass a whole series of game based proposals that require face-to-face presence, physical movement, object interaction, participatory immersion, action, etc.

Escape games: these are games where normally a group of people are locked in a room and have a time limit to try to get out by solving challenges, riddles and puzzles of all kinds, and in which a plot or mystery proposed in the beginning is usually followed. They are based on the critical thinking, skills and deduction capacity of the participants. Although their replayability is very limited, in recent years they have spread like wildfire.

Breakout games: they are a version of escape games in which, instead of having to escape from a locked room, the mission is usually to open a box secured with various locks by solving challenges and puzzles framed in a narrative of their own. They do not require as many materials as escape games (they are not made in real environments) and can even be portable.

Gymkhanas, treasure hunts: games usually played in teams which have to take on different tests and challenges. The aim of gymkhanas is usually to have a competition between several groups to see which is the best in solving the challenges. The aim of treasure hunts is usually to find something by following clues or passing tests. These types of live games have a huge potential: the immersive capacity and versatility make these games perfect alternatives to transfer any type of content to the participants.

Digital games: with imagination and creativity, any of the above types of games can be designed using digital means.

If we want to incorporate strategies, games, techniques and game-based dynamics into our organizations effectively, we need to find a way to commit to the adoption of playful thinking. Playful thinking allows us to recognize and be aware of the potential of games and train our gameful attitude, know player psychology, know the elements and components of games, know games... and it requires a lot of experimentation, a lot of trial and error. But basically, what is needed is to develop game culture: PLAY. Understanding the workings and dynamics of games, understanding the internal mechanisms that are activated when playing, experiencing the enjoyment and the “flow”, being sur-

prised by the number and variety of games that exist in the world... all these things allow us to activate and connect with our gameful attitude and greatly facilitate the process of adopting and adapting games into our organizations, in order to disseminate cultural heritage.

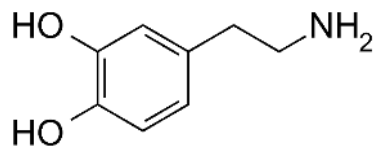
2.6. NEUROEDUCATION

Most traditional theories on games and education focus more or less on playing as an activity intrinsic to children and aim to explain the processes generated through playing from a psychological point of view, as well focus on their pedagogical and didactic approach. But well into the 21st century is when neuroscience theories and studies begin to be incorporated. The boom of games as a cultural product of widespread consumption, the new formulas, formats and supports, the growing market for video games and apps, the digital cultural industry - they all outline a new scenario that makes it so that the study of games is approached by other scientific branches as well (remember ludology?).

Therefore, advances in neuroscience bring a valuable contribution to the study of education and identify playing games (among other things, such as emotions, for example) as a valid tool to promote learning.

And what does neuroscience tell us about playing? What can we learn from neuroscientific research that will help us incorporate games in the dissemination of cultural heritage? Well, the starting point is that people like games because our brain releases dopamine when we play. Dopamine is a neurotransmitter directly related to motivation, reward, humour, mood, focus and learning. Dopamine is released by neurons, providing feelings of joy and reinforcement, and proactively motivating people. On a behavioural level, the key for learning lies in the anticipation and the prediction of the reward, not in the prize itself. At a neuronal level, activation occurs when the behavioural response exceeds initial expectations, when the prediction error is positive - meaning, when the reward is greater than expected or when there is an unexpected reward and, on the contrary, they become depressed when the expected reward is not received. In short, dopamine motivates us with the promise of a reward.

Games capture people's attention and their brain becomes motivated as it makes predictions and receives feedback. This continuous feedback allows us to move through stages, maintaining interest and motivation and, consequently, learning.



Dopamine

2.7. MOTIVATION, LEARNING AND PLAYING

The term motivation has appeared throughout these pages on numerous occasions and it is one of the key concepts to help us understand how games can become an effective tool to facilitate learning.

In short, extrinsic motivation is what leads us to act or behave in a certain way due to external influences and factors (such as rewards, threats, punishments, etc.), and intrinsic motivation is what leads us to act or behave in a certain way due to our own interests, desires, satisfaction or pleasure, regardless of external influences or factors.

Incorporating games in our cultural dissemination projects allows us to increase motivation on both levels. Extrinsic motivation is driven by the game's own mechanics: points system, rankings, recognition, rewards, victory. They are effective in the short term, but do not guarantee lasting or sustainable learning. Intrinsic motivation is driven by the player's needs, likes, interests and desires: to have fun, to experiment, to be surprised, to socialize, to put yourself to the test, etc.

But what drives or can drive people's intrinsic motivation when they play a game?

In the world of gamification, game and video game design, it is very common to first resort to the "Self-Determination Theory" detailed by the psychologist Edward Deci (2000). This theory points to three innate psychological needs that drive our intrinsic motivation: competence (the need to exercise our abilities), social connection (the need to belong to a group or community), and autonomy (the need to be able to choose).

Starting from the "Self-Determination Theory", Andrzej Marczewski, author specialized in gamification, proposed the RAMP model (<https://www.gamified.uk/gamification-framework/the-intrinsic-motivation-ramp/>) in which he points out four key drivers of intrinsic motivation:

- R for relatedness: desire/need to be connected to others.
- A for autonomy: desire/need for freedom, to discover things, to innovate.
- M for mastery: desire/need to acquire skills and competences, to master a task.
- P for purpose: desire/need for there to be meaning to our actions.

Let us now take a look at the so-called eight units of Octalysis, listed by gamification expert Yu-kai-Chou (2015), a list of eight key elements that can boost intrinsic motivation, particularly among people who play games:

- Epic call and meaning: the driver of motivation that is achieved when a person believes they are the one chosen to achieve something great.
- Accomplishment (development and fulfilment): the internal impulse and the desire to progress, to overcome challenges, to develop skills.
- Empowerment of creativity and feedback: the driver of motivation that occurs when people participate in a creative process in which they solve challenges repeatedly and try different combinations to see the results and receive feedback.
- Ownership and possession: the driver that is achieved by owning something, accumulating things.

- Social influence and affinity: the driver that brings together all the elements of a social nature, such as when you want to play the same game that a friend has just played, or you want to reach the same level as your friend.
- Scarcity and impatience: the impulse to want something for the simple reason that you can't have it or you don't have it yet.
- Curiosity and unpredictability: the impulse to know what will happen next.
- Avoidance of loss: the impulse to prevent something negative from happening.

As you can see, these theoretical models can be fully extrapolated to the everyday and spontaneous practice of playing (think about your game experiences and you can analyse first-hand the motivations that drive you to play following the models described above) and, consequently, they can also be applied when attempting to design a game. It is advisable, however, to consider these classifications as frames of reference, not as set in stone categories, which can help us understand the different mechanisms of motivation that are activated in players and guide our decisions when we design our own games.

In the end, any type of game (video games, chess, solitaire, a treasure hunt, whatever it is) can activate players' motivation and can therefore be used to promote learning. But, of course, not all games work for everyone, nor does everyone activate the same motivational elements playing the same game, hence the relevance of knowing these models.

3. GAME DESIGN PROCESS

If you got here, you already know that our aim is to be able to design and develop games in order to promote cultural heritage through active learning and by activating people's motivation.

As mentioned earlier, we are not going to use the concept of gamification for our aim or to the benefit of serious games or game-based learning, because gamified systems aren't actually playing, they are taking advantage of game elements and using them in non-game environments. However, we would like to underline that gamification studies have striven to break down the game into its smallest parts in order to shed light on its different elements and help devise and systematize design models. For this reason, you will see that we often point to references taken from gamification studies because they can be extrapolated to the design of our games.

The process of designing a game or any project with a game-based methodology is not far from any other social, educational or cultural project that you would like to implement or have already done so, although it has defining and specific elements that we will explore below.

These are stages we propose: needs analysis, design, prototyping, testing and evaluation/transfer.



3.1. NEEDS ANALYSIS

The design phase starts from analysing the reality that holds the needs we want to address: it may be that a museum wants to disseminate a specific content of its collection, a school wants to convey certain curricular contents in a different way in order to boost student motivation or evaluate specific learning, a leisure organization wants to promote the cultural heritage of its territory, an administration wants to offer different tourist services to attract a specific target group or diversify it, an organization receives the demand to create products or services to dynamize cultural content, etc. The needs are as many, as varied and as specific as there are incipient game-based projects - as you will have the opportunity to see in the chronicles section where we have included our own experiences within the Ludamus! project.

It may be that the game-based project arises directly as an idea, an inspiration, a brilliant moment of creativity, unrelated to any analysed or explicitly manifested need. In this case, it must be an apparent revelation that responds to desires, interests or needs on which you must also reflect, because it is necessary to understand what is hidden behind the idea in order to justify the project and guide the design of the game in all its stages.

We recommend spending some time writing these motivations down, as the resulting document can become a very useful work tool since it will collect very valuable information about the reasons that justify the project, the first ideas on what heritage elements to be approached, about format, medium, topic, setting, target group, etc. In fact, we recommend documenting the entire process as extensively as possible and re-writing the document as many times as necessary, justifying all modifications that the project undergoes until its final approval.

3.2. DESIGN

Although different models of game design are appearing little by little, we will use as initial reference the MDA Framework proposed by Hunicke, LeBlanc and Zubek in 2004 for the design of video games, whose purpose is to decompose the different ele-

ments of the game, identify the iterative processes that occur in the design, and understand the process as a whole, both from the point of view of the designer, and from the point of view of the players.

The model is named after the initials of three of the general and common elements identified in games: M for mechanics, D for dynamics and A for aesthetics. The mechanics would be the rules; the dynamics would be the systems which put the mechanics into action; the aesthetics would be the resources that guarantee fun, interest, perception, and emotions. These authors point out eight emotional responses evoked in the player when playing a game:

- Sensation: game as sense-pleasure.
- Fantasy: game where everything is possible.
- Narrative: game as drama.
- Challenge: game as obstacle course.
- Fellowship: game as social framework.
- Discovery: game as uncharted territory.
- Expression: game as self-discovery and self-expression.
- Submission: game as pastime.

We will delve into these three elements, among others, later on.

However, one of the most interesting aspects of this formal framework is that it raises the issue that the perspective of the designer and that of the player are different in what these elements are concerned: the designer will surely start thinking about the mechanics first, then about the dynamics, and finally about the emotions they generate; on the contrary, the potential player will feel motivated to play (to test the game systems and mechanics) as a result of their perception about the game (aesthetics). According to this bidirectionality, the design of a game must understand and assume the determining importance of the game experience that people have in order to guarantee their motivation and engagement.

Based on the MDA framework, we propose a first general recommendation: we must try to ensure that our game-based project is focused on making people's playing experience motivating and fun in order to try to convey the proposed learning objectives.

Continuing with general recommendations and reiterating the need to design games while thinking about the experience that people will have and perceive, we find it interesting to return to the Mihaly Csikszentmihalyi's definition of "flow" and his "theory of optimal experience" of. We invite you to revisit this information so as not to lose sight of the characteristics of the state of flow and to try to design optimal experiences for all types of people.

Below we propose a series of issues to address for the design of your games. It is an open and flexible proposal, but it can help you get started in the creation process from a formal point of view. We leave the inspiration and ideas to you, although you will find in the chronicles section a detailed account of the game-based projects we developed within the Ludamus! project – might they be useful to activate your creativity.

And remember: designing is not about making grandiloquent, beautiful, strange, ostentatious, complex games... but to do them well, with coherence and relevance, and ensure that they are functional in all their aspect in order to achieve the objective of disseminating cultural heritage among people.



3.2.1. LEARNING OBJECTIVES

We will talk here about the learning objectives and results we want to achieve and the indicators that we are going to use to measure the success or lack thereof of the game-based project we are going to design and develop.

Normally, we would talk about embedded learning to refer to the contents we want to address through the game. In our case, there will be learning related to some element of cultural heritage. In parallel, emergent learning is learning that emerges from the dynamics of the game: discovery, searching for information, collaboration, problem solving, etc.

As you know, the objectives should be formulated following guidelines that will help us verify the degree to which they have been achieved:

- They should be formulated in a clear, concrete and unambiguous manner.
- They should be measurable, observable and tangible.
- They should be real and achievable.
- They should be achievable in the short term. The results have to be given immediately after playing.

It is important to take the time to write the objectives following these guidelines, for three main reasons: first, because defining the objectives will be a huge help to guide decision-making during design; second, because they will serve as an evaluation and control tool for the obtained results (hence the importance of adding indicators); third, because they are useful in communicating your game-based project and activity proposal to the outside world, thus adding value.

3.2.3. TARGET GROUP

It's interesting to know and take into account the types of players there are.

Returning to the example we used in the previous section: there will be those who participate simply to help the students of Early Childhood Education. There will be those whose attention is captured by the challenge, the trials, the proposed tests, for their personal improvement. There will be those for whom the theme is reason enough to get fully involved in the game. But there will also be those for whom the theme is precisely the component that least motivates them. There will be those who get involved only because there's a time limit and will be watching the clock at all times. There will be those who become blocked if the game is individual. Or the opposite. And there will also be those who only care about the collaborative work and this will be the factor that makes them enjoy themselves and counts the most for getting involved...

As you can see, the reasons that make us activate the mechanisms of our motivation and involvement in a game are varied and diverse, and change depending on the type of player you are and also, of course, depending on the type of game situation you are in. There are several very interesting studies in this regard that come mainly from the world of video game design and development. We will do a small review of some of the most popular classifications:

Richard Bartle, designer of online and multiplayer games, in 1996 ("Hearts, Clubs, Diamonds, Spades: Players Who suit MUDs") defined these four types of gamers in his popular taxonomy applied to the world of video games:

- Socializers, people interested in relating to others. They have a special desire to relate and be part of a team to compete, cooperate and communicate. The social aspect (contacts and influence) is more important than achievements.
- Explorers, interested in relating and interacting with the environment. They are curious players who like surprise. They explore the environment freely and at their own pace, although they are also proud to be the first to discover the environment or an element of the game.
- Achievers are interested in acting in the environment. They are driven by the desire to dominate and control the game, accumulate points, levels, badges and rewards, receive recognition for their actions and lead the leaderboards.
- Killers, people interested in engaging others. They show their superiority, and competing and winning are their main objectives in a game. They seek constant challenge and overcoming obstacles.

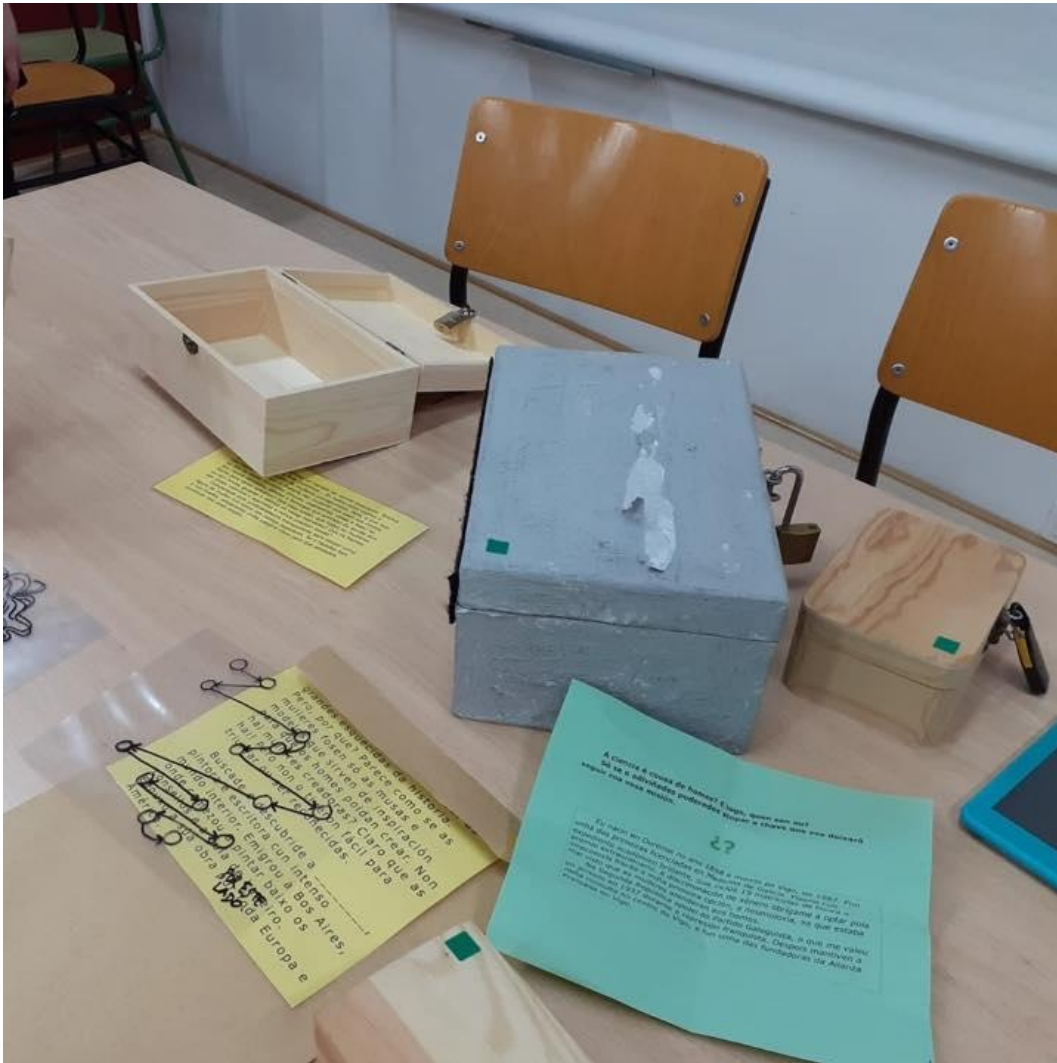


Within gamification, the taxonomy proposed by Andrzej Marczewski (2015) points out six types of players (<https://www.gamified.uk/user-types/>):

- Socializers seek interaction and connection with other people. They seek relationships and relatedness.
- Free spirits explore and create. They seek autonomy.
- Achievers need challenges to overcome, they want to learn and improve. They seek mastery.
- Philanthropists want to enrich the lives of others without expecting rewards, they are altruistic by nature. They seek purpose.
- Players are individualistic and only want to get rewards. They seek rewards.
- Disruptors want to break the system to trigger change. They seek change.

It is very interesting to be aware of these classifications and the characteristics of types of players because, on the one hand, it's a way to be aware of the richness and variety of motivations that activate us and drive people to participate, to play and, above all, to continue playing, and, on the other hand, because knowing player characteristics helps us design and make decisions concerning the mechanics of the game.

These and other taxonomies do not define typologies that are set in stone, on the contrary, one person can have characteristics from all of them and vary depending on the specific experience and game situation. It is advisable to take into account these classifications to create games that combine all these profiles or most of them.



3.2.4. MECHANICS

They are the mechanisms, the basic units of action proposed in the game that, in dialogue with the players and the components and elements of the game, allow the game dynamics to unfold. Mechanics are at the core of game design, because, based on the mechanics, players interact with the components of the game and dynamics are generated that lead to the accomplishment of the proposed mission. If the mechanics are well designed, the game will certainly work.

We will see below various classifications of mechanics that can be useful when designing our games or, at least, can help clarify what we are talking about and complete the definition using practical examples. There is no final consensus among game authors and creators, but there is an interest and great effort has been made in decomposing these basic units either from the sphere of gamification, or from the universe of creating or categorizing board games and video games. Experience helped us see that these lists of mechanics are also adaptable and transferable to the creation of live games, such as gymkhanas, escape games or clue games in the style of treasure hunts, whether analogue or digital.

PLAYER TYPE	MECHANICS
Socializers	<ul style="list-style-type: none"> - Competition - Social pressure to not feel excluded - Social status - Social networks - Teams or guilds - Social discovery
Free spirits	<ul style="list-style-type: none"> - Options to choose from - Unlockable content - Creativity tools - Exploration and search - Customization (avatars, for example). - Easter eggs
Achievers	<ul style="list-style-type: none"> - Challenges - Levels and progression - Learning / New skills - Boss battles - Certificates - Quests or search: many challenges in a short amount of time
Philanthropists	<ul style="list-style-type: none"> - Meaning, purpose - Access to more options - Sharing knowledge - Care-taking (looking after people) - Collect and trade - Gifting and sharing
Players	<ul style="list-style-type: none"> - Medals and badges - Prizes and physical rewards (fixed or random) - Leaderboards (relative or absolute) - Points and experience points - Economy, virtual currencies to spend on real or virtual goods - Lottery, chance
Disruptors	<ul style="list-style-type: none"> - Voting - Anarchy - Development tools - Anonymity - Innovation platform
All types of players	<ul style="list-style-type: none"> - Narrative/story - Time pressure - Progress, feedback - Curiosity (mystery box) - Theme - Loss aversion (i.e. fear of losing status, points, achievements, progress...) - Tutorials (not manuals) - Signposting

The previous table presents a summary of Marczewski's "Gamification Inspiration Cards", which draw a connection between different mechanics and their own related types of players.

<https://www.gamified.uk/user-types/gamification-mechanics-elements>

In the field of board games, the categorization developed by the website BoardGameGeek, a website specialized in board games founded by the Americans Derk Solko and Scott Alden in 2000, is usually used. We strongly recommend you visit this website, as you will find a lot of updated information about board games, as well as classifications made collaboratively by its members.

<https://boardgamegeek.com/browse/boardgamemechanic>

The website has currently identified and listed more than 150 different mechanics. We selected some of them below:

MECHANICS	DESCRIPTION
Take That	Players interact with each other with the aim of defeat/victory, setting obstacles, subtracting points... using various elements such as cards or dice.
Acting	Players use miming and gestures to communicate with the others.
Map Addition / Reduction	The map is added to as you play. There are usually tiles that are added or turned over. The map shrinks over the course of the game. There are usually tiles that are removed or turned over.
Betting	Players bet on a certain element with a series of characteristics.
Grid coverage	Players cover a grid using a variety of shapes efficiently to cover the maximum space.
Collecting	The objective is usually to collect a series of specific pieces or elements.

MECHANICS	DESCRIPTION
Tile placement	Tiles are placed to make a board, create compositions... in order to score points.
Worker placement	Each player has different “workers” and performs different actions depending on where they are placed on the board.
Trading	Resources are exchanged between players for different purposes, such as obtaining points.
Connections	Players form connections (routes, networks, roads ...) between different points of a board.
Deck construction	Everyone starts with the same starter deck, and as the game progresses, you’ll reap benefits based on your decisions.
Pattern building	Players place the components in specific patterns to obtain specific results.
Contracts	Players have to meet the conditions of a card (hidden or public) to earn rewards.
Cooperative Game	Players coordinate to win together.
Deduction	Players determine the identity of hidden information based on clues.
Drawing	You have to draw shapes, lines, figures... for a specific purpose.
Drafting	To distribute the cards: a player receives the cards, keeps one and passes the rest to the player on one side, while receiving the cards from the player on their other side.

MECHANICS	DESCRIPTION
Elimination	One or more players can be permanently removed from the game.
Speed matching	A pattern is revealed, usually a card, and you have to be the first player to find a match with other elements.
Teams	Several teams are organized that will compete against each other.
Hand management	We have cards in hand and we have to take actions with them, managing them and making decisions to choose when to play them.
Skill (Stacking and balancing)	Players must physically stack and balance pieces or objects.
Legacy	Mechanics that force you to play the same game for several sessions: changes and advances are transferred to future sessions.
Time limit	Players perform their actions with a time limit.
Majority	Victory is achieved by managing to gather a group of elements in various areas of the board.
Memory	Memory must be used to remember a certain position, a route, a specific event, etc.
Market	Players can buy or sell resources.
Cell movement	The board is divided into cells and actions are taken by moving the pieces from one cell to another.

MECHANICS	DESCRIPTION
Area movement	The board is divided into areas through which the pieces move. A number of actions can be triggered as a direct consequence.
Action queue	Players simultaneously plan their movements and execute them in a certain order.
Action points	In each turn, players receive a number of action points that they must use in a number of possible actions.
Pattern recognition	Players have to identify, place or reproduce patterns to get points.
Roles	Each player controls a character/avatar with unique characteristics that progresses in the game.
Hidden roles	Characters are assigned that are not publicly revealed at the beginning of the game.
Simultaneous action selection	All players plan their turn simultaneously and in secret. They then reveal their plans at the same time.
Storytelling	Stories are created from scratch, or a story is continued, using different elements (conceptual, written, illustrations ...).
Auction / Bidding	Players bid to get something (cards, rewards, resources...).
Modular board	Through the placement of tiles, the game is defined and redefined.
Dice rolling	Results are decided by rolling dice.

MECHANICS	DESCRIPTION
Roll / Spin and move	Players roll dice or spin spinners and move token or pawns in accordance with the roll.
Voting	Players vote to take action, get results, or approve proposals.

3.2.5. DYNAMICS

They are the way in which people interact with each other and with the game itself to accomplish the proposed mission. Their name is usually a verb of action: socialize, compete, listen, express, create, reflect, collect, collaborate, manage, negotiate, chase, kill, ask, order, find, exchange, etc.

To help understand the concept, let's say that the mechanics are the actions and movements a game proposes, and the dynamics are how we are going to do it, how we are going to exercise the rules. To continue with the example given earlier of the literary escape room, the game mechanics wouldn't have to vary much if we decide to carry out the game individually or in groups, because many of the proposed mechanics could be the same: questions, search, clues, time pressure, solving riddles... But the dynamics, how to do it, how the students are going to behave, how they are going to interact with elements of the game and with each other, these would change if we add or remove the team mechanics: if the game is individual, there will be dynamics such as competing, hindering the progress of others, etc.; if the game is played in teams, there will dynamics such as collaborating, listening, etc.

In addition, dynamics bring about a large amount of emergent learning.

3.2.6. COMPONENTS

Dice, boards, cards, tokens, clocks, puzzles (of many types), boxes, avatars, pawns, medals, coins, keys, locks (also a variety of types), cards, passwords, clues, software, etc., everything that your imagination can come up with and is necessary, relevant and coherent for the game.

It's easy to see what the components are for commercial board games, because they are usually deposited in a box and detailed in the rulebook. But digital and live games also require essential components to be able to play. They are fundamental for games so that you are able to interact with them, activate the mechanics and trigger the dynamics, so it is necessary to list them in detail or, if your game-based project requires it, to design them with relevance and coherence, as already pointed out.



Due to the boom of the board game market, to digital culture and the application of game-based learning in various contexts, it is increasingly common to see traditional components such as dice or a paper board coexist with more original components, made with personalized designs that help the narrative and aesthetic immersion of the players.

3.2.7. SPACE

Naturally, here we are going to discuss more about live games, although we think it is also necessary to make a small reflection around board games and digital games.

For board games it would surely be enough to have a table and some chairs, but it is also necessary to consider that the space is safe, comfortable, friendly and accessible to all players, with adequate light and temperature, and that there are no external elements to interrupt the game. In the case of digital games, in addition to the above features, a good internet connection would also be necessary. If the space does not have these characteristics, it is without a doubt that it can ruin the players' experience.

Also take some time to design appealing virtual environments for your digital games: the scenery and scenarios, the music, the atmosphere, the sounds, etc. are elements that must be worked on so that the experience is rewarding, immersive and motivating.

In the virtual world we recommend applying the so-called “app smashing”, a process that consists of combining various apps in the same project – in this case, your digital game-based project. Combinations are endless, as many as your imagination and your desire for experimentation allows: we could say that each app can represent a different space of the game. In the resources section we point out some apps you can use on their own or by combining them with each other.

Our next stop is real environments for live games.

Space transformations:

In live games where it is necessary to transform spaces, versatility is key. The space has to be versatile to guarantee being able to transform it for the benefit of the game and the players, but also to take advantage of all the potential it can offer.

But first of all we must know what spaces there available for organizing the game and how to combine them with the game’s characteristics and spatial and material needs. But perhaps the most logical or obvious decision is not always the most beneficial for organizing the game. It might not always be convenient and it will depend on many factors and conditions that must be taken into account, but sometimes breaking with the logic or the uses commonly assigned to different spaces when we propose an innovative activity can benefit the motivation of the participants. First of all, the surprise; then, the awareness that “something is going to happen” and the predisposition to assume that uncertainty drives focus and motivation; later, the value and significance that the players are going to assign to the experience, and the emotional reaction.

You can also alter the space to accommodate an experience that is different from the uses commonly assigned to it, or “disguise” the space according to the narrative and the staging of the game. Convert a library into an old castle library; turn a classroom into a television set; a multipurpose room into a pirate scene... With very simple things, the current uses of spaces can be totally modified, turning them into “places”. All this also has to do with the staging or aesthetics of the game, which we will talk about again later.

The space also needs to be versatile as far as the furniture is concerned: it is ideal that tables and chairs can be picked up and moved, and that it will not require you to move shelves or move everything out.

And, of course, it’s good if the specific spatial elements play to our advantage: if you plan to design an escape room, first check that the door can be locked and that there are options for hiding the components of the game; if you incorporate any digital interactive components, make sure there is internet access and electricity; if you need to make it dark, check that it is possible... And also take into account possible general factors that can hinder the game as it unfolds: that there are no interruptions or distractions or large background noises, that there are no excessive hot or cold temperatures, that the space is ventilated, that it has good acoustics, that there are no risks or physical dangers, etc.

It is clear that choosing the right space will help a lot to make the experience fully enjoyable. We will delve into this topic in the next section of the guide.

Use of heritage spaces:

When we create games that disseminate and interact directly with real heritage elements (a museum collection, an exhibition, artistic works, etc.) or that take place in monumental spaces (a city, a monument, etc.), respect for the history, integrity, security and

protection of the heritage must prevail. You will certainly have to ask for the relevant permissions and detail the uses you have in mind.

3.2.8. TIME

As with any other cultural or educational activity that you want to design, it is important to decide the time allocated to playing the game. And this is for many reasons:

- to incorporate it into the time logic and schedule of the organization, coordinate the action and plan the schedule together, making the appropriate adaptations in advance.
- because time pressure can be an actual part of the game's mechanics.

If the game is divided into different sub-activities, it is also essential to time them. Keep in mind that timing can be a component of the game, because it sets the limits in which the mission has to be accomplished, and this is part of the mechanics and dynamics, it activates the degree of player involvement and motivation and it guides their behaviour, both in terms of decision making and in terms of efficient organization and time management.

It is very important to keep in mind that time cannot be a factor of frustration or boredom: a complex challenge and little time to do it can generate frustration, stress, and lead to loss of motivation (remember the “flow”, the importance of feedback, the feeling of progress and control); a simple challenge and a lot of time to do it can generate boredom and lead to immediate “disengagement”.

It is also essential that you communicate time information to the players: how much time they have available to finish the game, how long it takes to play the game once (for board games, this information must appear in the rulebook), and more if time is a game mechanic.

In games that include time pressure mechanics, you can think of different ways to communicate the passage of time: in live games you could provide stopwatches, make voice announcements, play a certain music or sound that indicates the given time is nearly up, create some physical element that helps visualize the passage of time, etc.; in digital games, you could add a digital clock or countdown; in board games you could use traditional components such as hourglasses, etc.

3.2.9. ATMOSPHERE

Theme and narrative:

Wrapping the game in a story is the perfect way to ensure the involvement of the players, because it places them in the heat of action as protagonists. If the presentation of the mission (which we can relate directly to the theme of the game) helps capture people's attention and seeks to activate and create expectations, the narrative helps hook and maintain their motivation and involvement in the game. The epic vocation and resorting to fantasy and humour are some very effective resources when we want to implement games or game-based learning systems.

The more elaborate the narrative, the more immersive it will be. To do this, we must think about the protagonists, the conflict and the challenge, which must be connected to the emotions and the things that really matter for the players in order to ensure their empathy, without losing sight of the coherence and continuity of the plot.

In short, and summarizing a lot, an outline that can be used to script our games is this: the protagonists seek to accomplish a mission and for this they have to overcome a series of obstacles. We can use the functions that the Russian anthropologist and linguist Vladimir Propp listed in his structural analysis of the morphology of classical tales, or the pattern proposed by the anthropologist and professor Joseph Campbell called “the hero's journey” or “monomyth”, widely used in storytelling in disciplines such as cinema, advertising, video games, etc. We could also turn to Gianni Rodari and his *Grammar of Fantasy* to help us create a narrative for our game.

Aesthetics, staging:

Let's start from the statement that emotions (psychophysiological reactions to stimuli) are what manage to make an experience transcendental, meaningful, unforgettable. Designing the setting and aesthetics of the game helps, above all, to maintain the coherence of the game from an emotional and sensory perspective, while serving to weave all the elements of the game together and also to embroider them, if we are to follow the weaving metaphor.

The staging and aesthetics are therefore closely related to the narrative, the material components, and the space. We have already been presenting, as we unfolded the different sections of this chapter, some clues on how to create the aesthetics and the staging in favour of the game. For example, when we talked about space, we underlined some advantages of setting the stage and decorating spaces to turn them into “places”. This benefits the narrative congruence immensely, but also awakens sensations at an emotional level in the players, which will help their immersion and help them bond with the game and with the game-based experience. We also talked about presenting the mission by using a story, a narrative. First of all, we must say that taking the time to more or less elaborate the narrative is already an aesthetic decision. And from here we can create other material elements that will participate in setting the stage of the game.

Of course, it also has to do with the quality and appeal of the materials used. Let's assume that the more elaborate and clean your design, the better. It can also help to create bizarre, strange, alternative materials, with divergent and unconventional uses.

3.3. PROTOTYPE

In the field of board games, video games or digital games creation, prototyping is a widespread concept, but here we will also use it to speak about live games in order to unify our content and not create misunderstandings.

Once you have made decisions on all the issues addressed above in the needs analysis and design sections, although it can also be done simultaneously, it is time to develop the first versions of the game itself: this is what we call a prototype, and it is an essential practice that enables you to check the viability and playability of your proposal and make the necessary adjustments to calibrate all the elements of the game.

With the first prototypes of the game you can undertake precise testing and improve it as you test, until you reach the final version.

Although it depends on the type of game, you can assume that, in general, this is a long process that will certainly overlap with the testing. During this process you must sketch all the elements of the game, including the rules, the graphic components, the play components, etc.

In the beginning, it is advisable to create the simplest possible versions of the materials, guaranteeing, of course, that the game is playable and that the information is sufficient and clear: using paper or cardboard in the case of board games, for example. This way, we can correct and improve the errors without compromising the final graphic design, the aesthetic part; if we start designing the prototype in detail from the graphic or aesthetic point of view, it is likely that we will take very valuable time from what is truly important in the first place – checking the viability of the game, and we will have to remake all the visual elements. Only when we have sufficiently tested the game and concluded that it works, is it time to concentrate on and elaborate the aesthetic elements and the final components, which should be already thought out, projected and even sketched, but will only be executed in the final prototype. These recommendations can also be applied to drafting the rules, to the way of explaining the game if it is a live game, to the narrative, to the possible set design if we are talking about a live game, etc.

The prototypes will continue to be perfected as we test our game: they receive positive feedback from the tests. We will talk about this below.

Proposal to draw up the rules: what should a board game rulebook contain?

- Name of the game.
- Number of players.
- Minimum recommended age.
- Average duration of a game.
- List of components.
- Brief description of the game, touching on the theme, setting, mission, victory conditions and main mechanics.
- Preparation of the game: detailed description accompanied by an image whenever possible.
- Detailed description of a turn, detailing all possible actions and movements, accompanied by images and examples.
- Description of the end of the game: when and how is the game over? Who wins? Add images and examples.



3.4. TESTING

Testing is the stage when the game comes to life in practice, when we challenge the first people to try our proposal, and the stage that allows us to improve the game, correct errors and consolidate it in all its elements. Take it as trial-and-error, with an open, receptive and constructive mind.

Here are some recommendations that can help the testing phase be productive and effective:

- At first, the testing of the prototype can be done with the team or person who created the game, playing through the entire games or several turns in the case of board games and digital games, or simulating live games. We should avoid being self-complacent.
- Next, consider diversifying the profile of your testers: in terms of age, game experience, number of players, etc. We can make an analogy with scientific research: the more varied the tests, the more valid and reliable the testing phase will be.
- We can help people who are testing our game with a form or questionnaire so they know what aspects to evaluate. We propose in the annexes a questionnaire template that you can adapt to your experiences. If the testers are children, it's good to help them read the questionnaire, do it out loud or through an informal talk at the end of the test.
- Write down all comments, observations, new ideas, aspects to improve, strengths and weaknesses, etc. This record will be very useful to improve the prototype for the final production of the game.
- You should not excessively guide the ongoing game, overreaching with unnecessary evaluations or opinions, or helping players too much. The important thing here is that the game progresses naturally, in an environment as close to reality as possible: during testing, we should position ourselves as just another player, only helping to explain the rules and clarifying doubts, but without overdoing it, without commenting on possible outcomes or interrupting the game.
- Honesty must prevail over ego: it is important to accept criticism, because thanks to it we can improve the game. That's what it's all about!
- Test all the elements of the game, including the rules: in board games there are rulebooks (you can propose testing sessions where players have to play without your explanations to see if the rules are sufficiently clear and understandable), in live games there are verbal explanations (more or less role-played, depending on your aesthetics and staging decisions), in digital games there are texts or videos that accompany them.
- We must constantly evaluate if our proposal is perfectly cohesive in all its elements and if it meets the learning objectives we proposed in the needs analysis and in drafting the initial objectives.

We know from our experience that in the case of live games the testing phase can be difficult to implement: in live games with large groups it is very difficult to test the proposal to its full potential, because, as if it were a theatre play, it could be that you will not be able to count on too many people in this phase and there will be factors that will

only manifest in certain groups, or that the décor and atmosphere elements make it difficult to replicate the experience in advance, or that, when carried out in a location of limited or restricted access (such as a closed space of cultural, monumental or artistic interest), the space cannot be available until the actual implementation of the game, or that the game is conceived as a single isolated event, without the possibility of repeating the experience, betting everything on a single card... In these cases, we will choose to test the elements of the game by creating simulation environments as close and similar to reality as possible.

The various tests will allow to improve the prototypes of the game until its final version, which will be used or implemented or will take place in real environments so that the learning objectives can be achieved.

3.5. FINAL EVALUATION AND TRANSFER

Although the testing phase itself is part of the evaluation, here we refer to the final evaluation after implementing our game-based project for the target group and context for which it was conceived.

3.5.1. EVALUATION OF LEARNING OBJECTIVES

If our learning objectives and their indicators are well written, at the end of our game implementation we will be able to compare what was projected with what was actually achieved.

Because what we really want to know is whether the game was effective in achieving its learning objectives. In this sense, whether they were met or not can be one of the indicators that evaluate the relevance and validity of the game. If the objectives were not met or were only partly met, perhaps it is because the design and implementation of the game were not successful, and we will have to find the reasons in order to improve it.

As tools to evaluate the achievement of the objectives, we propose to diversify the techniques for data collection: questionnaires, observation, checklists, anecdotal record, talks with the participants, etc.

3.5.2. EVALUATION OF THE DESIGN AND IMPLEMENTATION OF THE GAME AND GAMEFUL RESULTS

We need to be aware that a game-based learning experience should be evaluated from the perspective of the players and their motivations. It's good to remember that choosing to incorporate games in the dissemination of cultural heritage is based on the intention of seeking to connect and activate people's motivation in the face of learning, hence the need to evaluate their actual experience, their emotions and reactions, and whether the conjunction of all the elements was effective.

We propose a series of questions through which to reflect, through intense and rigorous observation, on how the game implementation went or is going, and which you can also use to create evaluation tools for this very purpose, such as questionnaires, talks, etc., or to reformulate the testing questionnaire:

- Is the proposed mission clear enough to capture attention and activate people's motivation?
- Does the proposed mission connect with people's interests?
- Are the proposed mission, narrative, and mechanics explanatory enough for people to understand what is being asked of them and how to do it?
- Does the proposed mission encourage people to strive to improve their skills and competencies and expand their knowledge?
- Are the game mechanics balanced in relation to the capabilities of the players?
- Do the proposed mechanics stimulate the motivation and effort of the players?
- Do game mechanics facilitate or promote discovery, autonomy, exploration, curiosity, and knowledge building?
- Does the staging, atmosphere and aesthetics manage to capture the attention and activate the motivation and interest of the people?
- Do the dynamics generated during the game correspond to the projected or predicted dynamics? If not, did you incorporate solutions to correct this?
- Are the space and time adequate for playing the game? Are they elements of the game that reinforce people's interest in the game's content?
- Are the game components and materials effective, practical, engaging, and relevant to playing the game?
- Are the components, materials and mechanics of the game easy to understand, handle and/or use by the players?
- (...)

Once you have the answer to these questions (and others that you consider important in your specific game-based proposal), you will be able to decide if the design and implementation of the game helped achieve the expected results, whether or not they were fulfilled, partially or completely. We insist on the idea that what you are evaluating here is whether the design and implementation of the game were meaningful to people, whether they activated their motivation and interest in knowing more about heritage, not whether the specific learning objectives were met. And from there, you can make the appropriate decisions to improve the game and transfer what you've learned to other game-based experiences.

As we have already said, learning to incorporate games as a tool for promoting cultural heritage requires a lengthy process of trial and error, of constant experimentation, of curious exploration, and also of playing a lot in order to enrich our game culture. It is a time consuming process, but the results are so positive (and the journey is so much fun), that it is worth trying.

3.6. GAME ADAPTATION

Maybe you know a game that adapts perfectly to your interests for achieving your desired learning objectives. In fact, given the rise of the board game market and digital culture, with hundreds of open game proposals created by organizations and people of all kinds, it is an increasingly widespread trend to use already existing games to apply in different contexts and achieve specific objectives. Game-based learning also contemplates this possibility and we encourage you to explore it.

It is also possible that we are only interested in employing of part of the elements of a certain game: its theme, its narrative, its mechanics, its components... In this case, we can adapt the elements we are interested in to the contents our work is focused on. To this end, it is necessary to point out that we must be consistent with copyright and intellectual property, respecting them completely and / or requesting the relevant permissions. In the case of mechanics, we need to point out that they are not subject to copyright, they are not owned by anyone, but we can end up in the questionable limit of plagiarism when we recreate images, texts, or a certain aesthetic approach... We may be interested, for example, in creating a game of questions and answers (mechanic 1) about specific cultural content, in which we move along a board by rolling dice (mechanic 2) and try to be the first person to reach the goal with the maximum number of correct answers given. The indicated mechanics could be used freely, but using the aesthetics of the famous “Trivial Pursuit”, for example, could pose a problem with intellectual property rights, especially if our purpose is to market the product.

There are different procedures to adapt original games to our learning and organizational objectives: modifications to adapt the contents, using the mechanics but changing the narrative, aesthetics, atmosphere or components, reuse the components but giving them a new use, etc. However you chose to move forward, it is again very important to be familiar with the elements that make up a game in general and the game you are adapting in particular.



"The Healthy Goose Game" at the 2018 Researchers' Night of Autonomous University of Madrid

4. RESOURCES, MATERIALS AND TOOLS

4.1. DIGITAL RESOURCES

We are living through a full expansion of digital culture and technology, and more and more apps, platforms and systems appear every day that allow us to create transmedia communication environments perfectly suitable to design game-based experiences in an affordable way, with no need of great specialized knowledge.

Below we propose some resources that may be useful for your projects, although we are fully aware that this selection may become obsolete in the coming times thanks to the continuous progress of technology, a leader in innovation.

We also present some resources with guides, ideas and materials to create escape and breakout games.

WHAT FOR	NAME	LINK
To conduct interactive surveys in real time	Kahoot!	www.kahoot.com
To conduct interactive surveys in real time	Quizizz	www.quizizz.com/
To conduct interactive surveys in real time	Mentimeter	www.mentimeter.com
To conduct interactive surveys in real time	Plickers	www.plickers.com
To conduct interactive surveys in real time	Socrative	www.socrative.com
To design treasure hunt-style games by missions	Goosechase Has app and website	www.goosechase.com
To design interactive presentations and breakouts	Genially	www.genial.ly/ blog.genial.ly/breakout-educativo/
To personalize videos by adding surveys, comments, questions, and get engagement data	Edpuzzle	www.edpuzzle.com
To create avatars	Framiq	www.framiq.com/
Interactive roulette for draws	Fluky	www.fluky.io

WHAT FOR	NAME	LINK
Augmented reality, very easy to use	Aurasma/ HP Reveal	www.hpreveal.com/
To create puzzles	Jigsaw planet	www.jigsawplanet.com
To create secret codes and messages		teachersroom.net/ secretmessage/ secretmessage.html
To create secret codes and messages		www.theproblemsite .com/reference/ mathematics/codes/
To create crossword puzzles		worksheets.theteache rscorner.net/make- your-own/ crossword/lang-es/
To generate mazes		egenerator.net/
To generate various puzzles		puzzlemaker.discover yeeducation.com/
Multiple resources for generating different escape game elements		tmott33.wixsite.com/ mott/breakout-edu- resources
Resources for escape rooms		escueladeexperiencias .com/recursos- escape-room/
Digital lock generator		eduescaperoom.com/ generador-candado- digital/
Puzzle ideas		lockpaperscissors.co/ escape-room-puzzle- ideas/
Tools for escape rooms		eduescaperoom.com/ retos-y-enigmas/
Guide to create escape games		gsita.com/wp- content/uploads/ 2018/04/break-out-y- escape-room-juegos-

WHAT FOR	NAME	LINK
		de-fuga.pdf
Ideas and resources for escape games		breakoutedu.com/
Ideas for escape rooms		therombocode.es/elemento-basicos-de-un-escape-room/
Countdown		versor.com.es/cuenta-atras.html
Ideas for escape rooms		nowescape.com/blog/101-best-puzzle-ideas-for-escape-rooms/
Guide to create an escape room		emprededora.extremaduraempresarial.es/wp-content/uploads/2018/04/Manual-de-Escape.pdf
QR code generator		www.qr-code-generator.com/
QR code generator		www.the-qr-code-generator.com/
To create mobile adventures and interactive guides for smartphones and tablets	Actionbound	en.actionbound.com
To create interactive resources and activities	H5pTechnology	h5p.org/
To create trivia style games	Trivinet	www.trivinet.com/
To create gamified decks	Decktoys	deck.toys/
To create educational games	Educandy	www.educandy.com/
To create custom activities and resources	Wordwall	wordwall.net/
To create custom activities and resources	Playbuzz	www.playbuzz.com/
To create custom activities and resources	Learningapps	learningapps.org/

WHAT FOR	NAME	LINK
To conduct interactive surveys in real time	Quizlet	quizlet.com/es
To create custom games	Educaplay	es.educaplay.com/
To create educational video games (advergames)	Mobby	mobbyt.com/
Presentation with selection of online tools for gamification (Antonio Machado J.)		view.genial.ly/605b81a2e77b740d24ec8afa/presentation-herramientas-online-para-gamificacion
To create custom games and resources	Flippity	www.flippity.net/
To create interactive visual materials	Thinglink	www.thinglink.com/
To create digital galleries for photos or art	People art factory	peopleartfactory.com
Basic guide to creating educational breakouts: “Libro ancestral de escapism” (“Ancestral book of escapism”) by Pedro A. Martínez Ortiz		view.genial.ly/5cf7cf59ba6875of686735do/presentation-libro-ancestral-de-escape
To create cards and badges		badge.design/
To create cards and badges		www.festisite.com/
To create cards		www.mytradingcards.com/
To create custom games		www.cerebriti.com/
Augmented reality	Metaverse	studio.gometa.io/landing
Augmented reality	Wallame	wallame.en.softonic.com/android
To create digital escape rooms	Room escape maker	roomescapemaker.com/
Countdown with password		eduescaperoom.com/contador-online-

WHAT FOR	NAME	LINK
		escape-room-educativa/
To create password protected short links		thinfi.com/
Encoded message generator		orangepiweb.es/codigos/secreto/index.php
Binary code message generator		arytranslator.com/
Caesar code generator		planetcalc.com/1434/
Newspaper clipping simulator		www.fodey.com/generators/newspaper/snippet.asp
To create messages with images		om.edu/worksheets/code.php
To create tilt-to-read messages		codepen.io/ninvert/full/JEPzxO
Old postcard generator		ay.com/generadorcartas/
Whatsapp chat generator		ewhats.com/generator
Encrypted message generator		www.simonsingh.net/The_Black_Chamber/index.html
Colour encoder		eduescaperoom.com/codificador-de-colores/
Grid encoder		eduescaperoom.com/codificador-rejilla/
To design role-playing games	RPG Maker	www.rpgmakerweb.com/
Tool to create electronic games	Adventure Game Studio	www.adventuregamestudio.co.uk/

WHAT FOR	NAME	LINK
Tool to create narrative games	Twine	twinery.org/
Tool to create custom games	Webquest creator	questcreator2.com/majwq/
Allows you to create quiz games in the style of Jeopardy contest TV show	Factile	www.playfactile.com
To create custom activities and games	Class Tools	classtools.net/
To create 3D games without programming	Entidad 3d	www.entidad-3d.com/
Software to develop video games	Unity 3D	unity.com/
Download free icons	The noun project	thenounproject.com/
To design digital games, since the pages allow passwords (link rooms or clues)	Wix	es.wix.com/
Allows you to create virtual spaces in which to share information	Mozilla hubs	hubs.mozilla.com/
Forms that allow passwords	Formularios de Google	docs.google.com/forms/u/o/
To create escape rooms		nowescape.com/blog/101-best-puzzle-ideas-for-escape-rooms/
Power point hyperlinks also allow you to create digital games	Power point	

4.2. A GUIDE TO DESIGN GAMES OR GAME-BASED EXPERIENCES

NAME	
NEEDS ANALYSIS	
SUMMARY: what is your game / game-based experience about	
OBJECTIVES (related to the heritage elements you want to disseminate)	
GAME MISSION	
TARGET GROUP (number of players and recommended ages)	
HOW TO PLAY: rules	
MECHANICS	
DYNAMICS	
COMPONENTS AND MATERIALS	
SPACE	
TIMING	
NARRATIVE	
SETTING THE SCENE, AESTHETICS	

4.3. TESTING: QUESTIONNAIRE FOR PLAYERS

NAME OF THE GAME: _____

PLAYER'S AGE: _____

INFORMATION ABOUT THE GAME:

Dte: _____ N° of players: _____ Game duration: _____ min

INDICATORS

1=Very poor 2=Poor 3=Neutral ou N/A 4=Good 5=Very Good

ITEMS	SCALE	OBSERVATIONS
Rules	1 2 3 4 5	
Difficulty and mechanics	1 2 3 4 5	
Theme and atmosphere	1 2 3 4 5	
Visual quality, graphic design and components	1 2 3 4 5	
Originality	1 2 3 4 5	
Game mission	1 2 3 4 5	
Game duration	1 2 3 4 5	
Fun and game experience	1 2 3 4 5	

GENERAL OBSERVATIONS

(Would you play it again? What did you like most and least? Do you have any suggestions for improvements or changes? Would you recommend it?)

OTHER OBSERVATIONS

5. TECHNICAL RECOMMENDATIONS FOR PRINT & PLAY GAMES

5.1. DIGITISATION

Use the highest possible resolution for your scanner. The ideal for printing is 300 DPI, and the minimum for acceptable quality is 150, but if you start with larger files, you will be able to correct errors more easily.

Save the files directly in PDF if you are going to distribute them that way. If you are going to edit the files, JPG with 100% quality is a good enough format to work with.

5.2. SOFTWARE

These tools can be useful to make games (and other publications). They were used in the creation of this guide and also in several of the referenced games. They are free (as in «free speech» as well as in «free beer») and there are versions for the main operating systems:

- Inkscape, for vector design (logos, posters, maps...) <https://inkscape.org/>
- GIMP, for image retouching (bitmaps) <https://www.gimp.org/>
- Scribus, to lay out complex magazines and books <https://www.scribus.net/>
- LibreOffice, for general office work (writing rulesets, memos, etc.) and also for many simple layout tasks involving a lot of text (rules and the like) <https://www.libreoffice.org/>

5.3. SOME IDEAS FOR GAME DESIGN

In general, simplify. The less prep work (and playtime) a game has, the easier it is for people to experiment with it. There are excellent games that are also very complex, but they do require a lot more convincing to get people involved.

Think your game will be printed at home, on variable quality printers, possibly even in black and white, especially if it is the first time they are playing and it is not clear whether they will like the game: take this into account when making the game elements independent of colours (for example, if it is relevant for your game that some of the cards are red, put a symbol on those that distinguishes them from the rest). This will also improve accessibility for people with colour perception problems.

5.4. PREPARING THE PNP GAME TO DISTRIBUTE

It is recommended to compress in ZIP format (very well supported by most digital platforms).

For the purpose of embedding the game on platforms dedicated to Print&Play or simply for the convenience of those who download it, we recommend using a file name with semantically significant content such as «game_name-author.zip», using only ASCII alphanumeric characters: no spaces (replace with an underscore, _), accents, parentheses, letters like ñ or ç, etc.

In the ZIP file we suggest incorporating these contents:

- Two different pictures of the game, ready to play or already in action, where the faces of the people involved are not visible. The purpose of these images is to seduce the person who receives the ZIP, so it is important to ensure that they are attractive and that there are no inappropriate or out-of-context elements. They can also be useful for sites that archive or distribute PNP games, which often want to feature project images.
- A PDF entitled «RULES.PDF». This is the game manual itself, and the fundamental piece. There must be all information needed to play.
- A folder entitled «PRINT» that will contain all the material for the game ready to be printed on a home printer, that is:
 - All in PDF format.
 - A4 page size.
 - All material must have a minimum resolution of 150 DPI. We recommend 300 DPI, or even better: use vector graphics.
 - If you include two-faced elements (cards, etc.) take special care in the layout so that they match when printing.
 - If the game has elements that are physically larger than A4 (such as a board or map) they must be divided into pieces to print on several A4 and then combine.
 - We also recommend including a PDF version of these larger elements in their original size, without segmentation, in a single piece, to serve as a reference. It will also be useful for those who want to print the game with higher quality in a professional print shop. In any case, this file must always be complementary to the A4 division indicated above.
 - We recommend presenting the material for printing in as few files as possible (that is, if everything can be a single PDF, it is easier for those who print it).
- Optionally, it is good to include a folder entitled «EDIT» that will contain the editable versions of the files indicated above, if these were created with some software (Inkscape, Scribus, LibreOffice, etc.) The purpose of this folder is that other people will be able to recycle the material of the game under the terms of the license (see further on this).

5.5. SOME LEGAL TIPS

It is worth mentioning that none of the following segments can be considered professional legal advice: these are just some indications derived from our understanding of the casuistry related to intellectual property legislation, patents, copyright and reproduction rights.

Remember that even though you can take any image on the net to make a domestic game, you won't be able to distribute it legally if you don't have the explicit right to do so (arguing that «the image was on the net, so I guessed it could be used» won't quite cut it). You can only acquire the right to reproduce an image (or any other copyright-protected content, such as texts or music) in these ways:

- Whether the original copyright has expired. How long a copyright lasts depends on the law of the country where you live. In many cases, it is the life

sion of it. Just make sure you create your own content and don't name it in a way that may induce confusion (commercial game brands are often protected). However, it is best in these cases to always consult people specialized in your legal field.

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- Web de Ana Ordás, especialista en juego y gamificación en bibliotecas: <https://anaordas.com>
- Web de Marczewski, Andrzej: <https://www.gamified.uk>
- Web de Emil Labrador: <https://emil-lab.eu>
- Web de BoardGameGeek: <https://boardgamegeek.com>
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LUDIC INTERACTIVE INSTALLATIONS

PART I

“If I listen, I forget; if I see, I remember; if I do, I understand.”

Technically speaking, ludic installation means “setting up areas where children can play”, otherwise known as “playground”.

If we try to break it down, we will find all the elements we need to build a functional installation according to our purpose: to convey a message, in the most precise, accessible and fun way, trying to limit environmental interference that could distract and ruin the atmosphere or the reception of the message itself.

By installation, we mean:

- borrowing a perspective that comes from the artistic sphere,
- assembling elements and objects within an exhibition space², which we call a setting.

The ludic aspect of an installation is essential to creating the premise that what we will build is of interest to those who will benefit from it, regardless of their age.

Finally, we should add that by ludic activity, we mean any playful activity in which the unrestricted use of imagination³ is prevalent.

It would be worth making a digression to talk about the writings of Gianni Rodari – and we will only mention here his *Grammar of Fantasy*⁴ - who focused on the concrete elements that characterise imagination/fantasy and with which we can play.

Therefore, we adopt this broad-spectrum expression to speak of the enchantment that specific installations create when the interaction with the participant (old or young) works, triggers, creates, or activates a relationship, a world that has its own language.

When we talk about a ludic interactive installation, we talk about a setting in which the participant is called upon to intervene through active listening and participation.

² www.treccani.it/vocabolario/installazione/

³ www.treccani.it/vocabolario/ludico/

⁴ Gianni Rodari, *Grammatica della Fantasia. Introduzione all'arte di inventare storie*, in PBE, Torino, Einaudi, 1973, ISBN 88-06-03817-6 Grammatica della fantasia - Wikipedia

1. ACTIVE LISTENING

In Humanistic Psychology, Active Listening⁵ is a technique used to enter a relationship with the other, a type of dialogue that makes the subject feel that their needs are considered on a 360° spectrum, with the objective of stimulating their latent potential. All human skills are involved in Active Listening: sensitivity, intuition, attention, intelligence, understanding, empathy⁶.

What is the relationship between active listening and a ludic installation?

The principle is the same: to convey information, it is necessary to actively involve the participant and, above all, to engage them in dialogue.

We can involve them by using **the senses** and making an accurate analysis of:

- the MESSAGE we want to send;
- the TARGET GROUP we are addressing and the characteristics of the recipients;
- the ENVIRONMENT in which this message will be conveyed;
- the MATERIALS available to create the installation.

The first three elements may contain indications that can guide us to favour one sensory channel over another, and can help us make choices when it's time to create the setting for the installation and decide on the materials used to create it.

1.1. THE MESSAGE

The message or messages that will guide us in choosing the best installation can be numerous. Therefore, it is essential to understand if we want to use one or more, and agree on they actually mean with the client or the entity promoting the activity.

It can be about shining a light on cultural heritage, on a story, an experience, or an emotion that should be expressed and received using different channels.

→ **For example**, suppose we want to promote the cultural heritage of a valley full of water mills, where climate change has dried up all the waterways. In that case, we could be hired by a municipality with multiple requests: to emphasise the value of the decommissioned mills, show children how flour was made, show the value of the local elders as keepers of memories. All these messages help us understand what type of installation can satisfy these requests. Of course, the client may not always clearly see all potential messages; it is, therefore, helpful to meet and discuss so that all potential messages can emerge and appropriately develop.

1.2. THE TARGET GROUP

The target group is the set of people to whom the installation is addressed: they will use the installation and interact with it based on their physical, psychological and social characteristics. Therefore, it is essential to define the target group when designing the installation, taking into account, for example: gender, age, cultural profile, education level, disabilities, interests, etc.

5 https://en.wikipedia.org/wiki/Active_listening

6 <https://brescia.unicusano.it/universita/tecniche-di-ascolto-attivo/>

2. BUILDING AND INTERACTING WITH THE SENSES

When building a ludic and interactive installation, it can be to our advantage to focus on simple aspects that are often ignored, such as the 5 senses and the stimuli that we can manage through them.

The senses are “*anatomical structures with distinct functions through which the body collects stimuli from the outside world and its own organs and, after transforming them, transmits them to the central nervous system, informing or not one’s consciousness.*”⁸



2.1. ENGAGING EYESIGHT

Sight is the sense responsible for the perception of visual stimuli. It allows us to make out the shape, depth, distance and colour of what we observe⁹.

In this case, we can work with shapes (large, small, regular, irregular, recognisable ones such as the alphabet, or unrecognisable ones); surfaces (smooth or rough surfaces, reflecting or translucent), placing objects near or far (which become legible or illegible), with warm or cold colours, with light, shadow and also with rhythmic compositions based on all these elements.

→ **For example**, the use of light in [teamLab](https://www.teamlab.art/), a Japanese collective <https://www.teamlab.art/>



2.2. ENGAGING HEARING

Hearing is the sense in charge of picking up sounds from outside the human body and transmitting them through a complex mechanism that originates in the auricle to the temporal cortex, the area of the brain capable of receiving and decoding them.

We can therefore use environmental sound stimuli (through listening or by reproducing them), musical instruments (including improvised ones), or “non-musical” objects, but orchestrated in order to set up a well-defined sound path (transforming the environment and giving objects new dimensions and meanings). The voice is also an effective tool and it is available to everyone: it can be used to attract attention or create a specific sound texture that guides the participants. Moreover, it allows building a network of relationships between all the elements in the environment, for example, an exchange of sounds between the narrator and the audience.

→ **For example**, [AEOLUS](http://www.eurekalbinea.it/wordpress/wp-content/uploads/2013/08/Progetto-Anemos-le-sculture-che-suonano.pdf) London uses music, voice, and sounds.

<http://www.eurekalbinea.it/wordpress/wp-content/uploads/2013/08/Progetto-Anemos-le-sculture-che-suonano.pdf>

⁸ www.treccani.it/enciclopedia/organi-di-senso

⁹ <https://www.humanitas.it/enciclopedia/anatomia/organi-di-senso/>

2.3. ENGAGING THE SENSE OF SMELL



The sense of **smell** is the perception of stimuli related to odour. Chemoreceptors are specialised cells located in a particular area of the nasal olfactory mucosa, capable of reacting to the chemical characteristics of odorous substances.

Some environments are rich in olfactory stimuli (the forest, the sea), but even small things - such as perfumes - can light up our memory, evoke memories or cause physical reactions such as hunger. Likewise, food and cooking and all the associated smells often bring up countless emotions. They are not simple experiences to reproduce in “distant” environments but can make us travel even without any other stimulus.

→ **For example**, ERNESTO NETO used olfactory suggestions in the Plateau of Humankind for the 2001 Venice Biennale. <https://universes.art/en/art-destinations/venice/biennale-di-venezia/arsenale/ernesto-neto>

2.4. ENGAGING TOUCH



Touch is the sense that allows the recognition of some physical characteristics of objects (density, shape) that come into contact with the external surface of our body.

The best way to engage this sense is to turn off the light or blindfold those who experience the installation. However, a well-thought-out scenography can guarantee that sight enhances touch-transmitted sensations, by engaging our sensory memory. We should create a proactive contact with objects, materials and, in general, with the environment we chose: we could surround the person with tissue paper, so that the sound and the contact with their skin evokes walking through a dense forest. On the other hand, if we asked participants to dip their hands into a basin of warm water and soak the paper, while also inserting them in a medieval staging, we could transport them to the world paper artisans of the 1200s. Without a narrative context (written or spoken), the participants could still have sensations linked to their own memories.

→ **For example**, MASTRO CARTAIO activities for manipulating paper (La Corte della Carta) <https://lacortedellacarta.it/in-corso/#laboratori>

2.5. ENGAGING TASTE



Taste is the sense that provides information on the flavour of what we eat and drink by distinguishing between bitter, sweet, salty and sour.

We do not always have the opportunity to create an installation using taste, but surely a themed banquet would allow us to travel through a world of practices, customs and flavours. A food and wine tour is a very engaging and interactive journey. Often workshops can end with the cooking and consumption of the product. We remind you that fables and stories are great at evoking everything that taste also conveys on a cultural level; for example, in Hansel and

Gretel, the temptation represented by the beautiful gingerbread house entails enchantment and danger!

→ For example, through food in Hansel and Gretel - Il Vicolo Art Gallery, illustration by Emanuele Luzzati <https://www.galleriailvicolo.it/prodotto/emanuele-luzzati-hansel-gretel/> or Edible Books - Edible Books Festival <http://www.loganberrybooks.com/events/edible-books.htm>

Here are some examples of more complex stimuli that engage multiple senses simultaneously.

2.6. ENGAGING SIGHT, HEARING AND TOUCH

Through captivating images, movement, sounds.



Menashe Kadishman, Berlin Jewish Museum

2.7. ENGAGING SIGHT, TOUCH AND HEARING

Through body movements that produce sounds.



Chinese Carnival, Trento - 2019

After this incursion inside the human body, and before moving on to the more practical part dedicated to materials, let us briefly return to the purposes of these ludic interactive installations so as not to lose sight of them.

When creating an installation, we should:

- Allow the message(s) to clearly reach the participants, while also being aware of the importance to identify and understand what the client wants to convey and emphasise.
- Allow the participants to interact with the message, making them the protagonists of the activity, able change the trajectory of what happens, at least in part or without distorting the game.
- Make sure that the paths (the senses) that a message will follow are varied and inclusive: for democratic learning, it is necessary to speak to different types of intelligence.
- Create an installation that can also communicate didactic contents: teach concepts, convey stories, provoke thought about behaviours; knowing how to build a well-developed installation can be a valuable ability for teachers, museum workers, animators, or educational actors, in general.
- Ensure above all else that those who participate in the installation have fun and find it diverting (from the lat. *divertere*, proper “to turn elsewhere”), or follow a different path in which the rules of the game function as a basis for shared learning, roads that “turn away” only to reconnect in the end.

As Bruno Munari loved to say, quoting a Chinese proverb: “*If I listen, I forget; if I see, I remember; if I do, I understand.*”¹⁰

The link below contains an interactive PowerPoint presentation with theoretical elements and stimulating exercises:

<https://drive.google.com/drive/folders/19oEYeUZ5F5I5YitSBF3Sdmx-4DyBaTdk>

2.8. LET'S GET IN THE GAME

In order to focus on what information we need to start brainstorming, fill in this table:

Questions	Answers
Who is the client?	
What do they want to promote/emphasise?	
Which themes/messages need to be promoted? There can be more than one	
What is our target group?	
What is the environment where we want to or can build the installation?	

To continue brainstorming, you can use this second table, merging the answers you gave earlier - to create an installation in which the senses are the protagonists - it is a table that can also be filled at a later time.

¹⁰ On Bruno Munari <https://www.munart.org>

The answers you gave earlier can be merged into this second table - to create an installation in which the senses are the protagonists - it is a table that can also be filled at a later time.

	SIGHT	HEARING	TOUCH	TASTE	SMELL
Which senses should/could we prioritise considering the age, cultural profile, interests and abilities of the target group/audience we are addressing?					
Are there any pathologies, disabilities, physical or psychological characteristics of the target group that require us to favour one sense over another?					
Environment: strengths/weaknesses					
Staff (volunteers or contracted) - possible tasks related to their skills					

Local people who will be an active part of the installation – it's important to use their communication channels					
Materials already present in the chosen location					
Available materials (organisers do not have to buy them)					
Materials to create /materials to buy*					

*The second part contains a more exhaustive analysis of the materials.

If you want to fill in the tables directly click on the following link: technical table for designing an interactive installation

<https://docs.google.com/spreadsheets/d/1puPFNuT67YaMks6xuqx1FTAlhLlEnJAiuKYoujPs3w/edit#gid=0>

LUDIC INTERACTIVE INSTALLATIONS

PART II

We present below a practical guide to building an installation, step by step.

Even if you are reading this more out of curiosity rather than because of a professional need, we invite you to try and play with us.

This guide was designed to train, bringing out our existing assets or triggering curiosity and the desire to experiment. Get some sheets of paper, cards, pencils and markers; they might be useful. This exercise can be done individually, but we suggest discussing it with the entire team for a more participatory thought process.

You will find three videos in Italian with practical information transcribed below in the form of a storyboard.



1. THEME AND MATERIALS - THE MINIMUM IS ENOUGH

First tutorial: <https://youtu.be/bzhDWMhRoJM>

Watch the video (about 20 minutes) and keep the storyboard in hand for the exercise. We will use Bruno Munari'sⁱⁱ *Prelibri* as a stimulus. If possible, borrow it.

ii [Prelibri](#), Bruno Munari, Corraini, 2002, ISBN 9788887942668 – first edition 1980.

2. HOW AND WHERE TO USE THE MATERIALS

Second tutorial: <https://youtu.be/VySFsEPfy8A>

Watch the video (about one hour - it is divided into many mini-sections corresponding to the materials listed below) and keep the storyboards and materials on hand for the exercise. This work phase serves to open you up to various possibilities; it is a brainstorming session. Now let's try to divide the elements: we will imagine two locations for the installation.

Materials behave very differently outdoors and indoors. For this reason, we ask you to now divide a sheet of paper into two parts and naming the columns "outdoors" and "indoors". They must be **real places** that you know. Listen to the presentation of the **materials** and their potential, and mark your ideas in the columns.

outdoors (e.g., square, road, porch, forest, meadow, parking, others)	indoors (e.g. library, home, classroom, corridor, others)
list materials that you find interesting and of potential use	list materials that you find interesting and of potential use

It is important to start with a theme, a message (not necessarily a real one) that has already been decided if only to test it. If you already have one, write it as if it were the title. If you have no ideas, here are a couple of possible requests from a client:

1. The Forestry Commission wants to promote a game that will be launched in your region. The theme is **the forest and the region's traditions** typical to your country. You can choose whether to work in schools or in the forest. The target group are teenagers (but you can change it).
2. The libraries in your town or neighbourhood want to promote the new acquisition of **board games meant to promote European cultural heritage**. The theme to be conveyed is the one presented in each game, but done in a playful way. The target group are young adults and families in general. You can choose a single board game.

Ready?

We will list here the materials already mentioned in the video to understand how best to use them for maximum profits and minimum waste.

These are materials that we can easily find and are used to:

- A) limit the visual field and avoid dispersion
- B) divide spaces - allowing multiple experiences to coexist in the same room without contaminating them with inappropriate colours/sounds
- C) create a path
- D) make the theme recognisable and allow participants to immerse into the setting
- E) convey a sensation
- F) create the group



2.1. PAPER AND CARDBOARD PAPER

One of the materials we love very much is paper, accompanied by its close relative, cardboard paper.

Pros: light, hangs easily, covers surfaces quickly, even in the form of posters or wallpaper, keeps its shape, can be crumpled or folded, free if you use paper recovered from old books or magazines, and strongly indicates the environment you want to create (see installation [Feeding the soul](#) of Bread and Mate at the Messina Museum or the Rozzano Library¹²).

Cons: fragile, short-lasting. Once used, it is thrown away.

This material has infinite possibilities; we will only address a few. We invite you to use paper to plan, draw, make models of everything you want to create later. It is often used as papier-mâché in scenography, but that is a long and elaborate procedure. However, the sheets of paper can be treated much faster as if they were fabric, then hung, folded, punctured, but they will not be able to stand up on their own. The scenography yield is, however, very high.

2.2. CARDBOARD

Cardboard has as many pros as it has cons.

Pros: free or in any case cheap if recovered from supermarkets, and very flexible. It has two sides and two colours, so you can use these features to create drawings without painting by just cutting and pasting. Everyone can use it without danger.

12 <https://www.teatropanemate.it/allestimenti/museo-messina-milano/nutrire-lanima/>

Cons: if not properly “cared” for, it could give the impression of sloppiness and neglect. Can get wet in contact with a lot of water; if walked on, it weakens. It’s very difficult to reuse it.

How can we use it?

- we can build a structure, a wall of boxes or shapes to limit the visual field.
- we can play with the joints to divide the space, cut surfaces and insert/fit in cardboard (see the demonstration in [video 1](#)).
- we can use boxes to build a tunnel or a walkway, hang signs to create a path.
- We can create a setting/environment: by cutting and stapling, we can transform cardboard sheets and boxes into a real cardboard castle, a pirate ship, an airplane, or toy cars. Shops also sell large sheets that can be perforated, painted, used for interlocking.
- If we want to build, paint, or assemble something in a group, it is a material that even the little ones can safely use, “go team”.

We need a cutter, scissors, ruler, square, pencil or chalk, twine or cardboard stapler, and glue to cut and assemble the cardboard.

Here are some fascinating examples of books that show the plastic possibilities of this material: *Il Gioco della Scultura, Il Gioco delle Forme, Il Gioco delle Vermidita, Il gioco di Mescolare l’Arte*, all by [Hervé Tulle](#).

We also invite you to follow the work of [Olivier Grossetête](#) (France) and the [Bread and Puppet Company](#) (Vermont)

Now that we talked about the potential of cardboard, you can choose to insert it in your outdoor or indoor setting. Or both, but decide on the type of cardboard you will use depending on how you will use it. Also, consider this for all the materials presented below.



2.3. PLYWOOD

Also known as cardboard's tougher cousin.

Pros: flat, "light", easy to stow, durable; many of its sculptural characteristics are similar to cardboard; the above books could be made of plywood, as Munari had already suggested. It lasts a long time. It can be regularly repainted. An organization can choose to use it as a recurring set and can thus come to be its symbol or logo.

Cons: you need a jigsaw (simple, but dangerous), a socket, two tripods and a suitable place to cut it - or you need to go to a carpenter. Also, the cost for large surfaces can be challenging between the material itself, cutting and painting it.

How can we use it?

- to limit the visual field and avoid dispersion, it can be shaped/cut, giving it a shape, then making the shapes self-supporting with interlocking joints like those explained for cardboard. The shapes (trees – towers) can also help introduce the theme. *In Gioco in Orto*, in addition to the shapes, we had a carpenter make some chests (interlocking) used to create micro-gardens filled with earth and seeds. All the squares of the game were also made of plywood.
- to divide the spaces and create a path with openings, passages, signposts, cubes and shapes. Cutting plywood can also become a game. With this material, we created *I Giocanimali*, a checkers game with pieces shaped like turtles vs snails, a duck pond, two tangrams, a ball eating frog, a snake domino, a memory game with giant animals, a puzzle. Arranged in the space, plywood elements can create a path.

2.4. ROPES AND WIRES

Pros: light, portable, colourful, inexpensive, great for hanging paper and fabric. They allow you to create scenarios with minimal resources and "bind and guide" people who cross the space.

Cons: not very visible - and therefore sometimes potentially dangerous if not well marked.

Can be used to:

- Limit the field of view and avoid dispersion by creating circles, squares or semi-circles: pulling wires from pole to pole on which you can hang fabrics or sheets.
- Divide spaces with the same principle; the space can be further subdivided into rooms. For example, we created a version of Calvino's "city of paper" by filling a parking lot with sheets of paper hanging from threads arranged in a radial pattern.
- Create a path: thread can guide participants from one room to another and also bind them together.
- Create the group: a thread can be pulled, knotted, woven, it can create or incorporate spaces, define perimeters. It allows for what is called "community dramaturgy".

2.5. FABRICS

Pros: light, easily stowed and washable; they can be used as covers, curtains or screen; can be hanged on wires to divide spaces and situations (acoustically as well as visually). They can be used as projection screens.

Cons: they can be expensive; if not carefully set up, they can denote carelessness or negligence.

Can be used to:

- limit the visual field and avoid dispersion: hanged on wires, tied directly to poles, or even stretched to form a roof
- divide spaces: with the same principle, the space can be further subdivided into rooms or areas - floors (carpet)
- create a path; the fabrics can also be banners or flags; they can indicate stages or a route in a city.
- create a group: fabrics also have playful elements that allow getting together; a flag, a tent, cloaks or bandanas allow groups to interact in a positive way.

2.6. CARPETS

(various types of carpets, tarps, PVC floors)

Pros: PVC floors are easily washable. Like carpets, they can be cut into various shapes and can have different colours. They can be rolled up and reused.

Cons: they can be expensive. If not stored correctly, they can be damaged; if they are not PVC they can be complicated to clean.

Can be used to:

- limit the visual field and avoid dispersion: a coloured circle, a square to sit or stop in, perhaps with added cushions, can act as a clear message for children and adults.
- divide spaces: with the same principle, each carpet can indicate a different space, using different shapes or colours or simply placing them in different angles.
- create a path: the PVC can also be cut in the shape of an arrow. But it is not always necessary. Creating a path with different shapes and colours can be very fun and intuitive.
- create the group: the shapes cut out on the floor can be meeting points for groups, or they can be replicated in a small way with the same material and distributed to groups or drawn with make-up on the skin.

2.7. LIGHTS, SHADOWS AND COLOR FILTERS

2.7.1. FLASHLIGHTS

Pros: cheap, they can also come at the expense of the participants (they have to bring them from home), easy to stow, very engaging. They can be covered with coloured acetate sheets and cast coloured lights/shadows.

Cons: batteries pollute, drain quickly, need to be changed often; if it is not clear how they should be used, they can be distracting.

2.7.2. TABLE LAMPS

Pros: they create interesting illuminated areas and can highlight a game board or be pointed towards something on a wall. They can also allow you to play with shadows. If covered with colour filters, they can change colour. They are cheap and can be reused. They can indicate a path in an installation.

Cons: they need power sockets or a generator, and possibly also extension cables.

2.7.3. CANDLES

Pros: they are cheap and theatrical, very useful for marking paths or tracing areas.

Cons: they cannot be seen in full light and can be dangerous if not well protected by glass. They can start fires if placed in unsuitable places and left unsupervised.

2.7.4. LED HEADLIGHTS / SPOTLIGHTS

Pros: they can circumscribe and determine areas without needing anything else. They can light up when people pass if equipped with sensors. They can allow you to play with shadows; they can be used with colour filters. They can “design” an environment if they interact with carved and/or transparent sets.

Cons: they are more expensive, need a suitable socket, cables and support to orient them. They must be secured. However, their “cousins” – the spotlights - are less demanding from an economic and logistic point of view.

2.7.5. PROJECTOR(S)

Pros: it allows you to project onto the facade of a building and communicate the theme of the installation this way. If the projected wall or surface is small, the cost of the projector will be small.

Cons: rental price can be high (directly correlated with the image quality). You need a PC with the right connectors and adapters. Permits must be requested from the municipality for projections on public buildings. It is fragile and must be handled carefully. You need permission from the author for the chosen video or image, or you have to consider the cost of a technician who could select the images and make a montage for you.

*An example of a book to help you think “big” and guide your interaction with lights is *The game of shadows* by Hervé Tullet <https://www.herve-tullet.com/en/>, but also *A Pile of Leaves* by Jason Fulford & Tamara Shopsin <https://www.phaidon.com/store/childrens-books/a-pile-of-leaves-9780714877204/>*

2.8. SOUNDS

2.8.1. SPEAKERS

Pros: music can quickly create the required atmosphere. It can change from room to room and set the game’s mood, but it can also attract potential visitors. In addition, small but very powerful speakers, which can be attached to a PC or mobile phone, exist.

Cons: pay attention to playing copyrighted music. If you don’t have a budget, look for *creative commons* or *royalty-free* sites. You might also need a mixer and someone to use it..

2.8.2. A “MUSICAL” SET

Pros: it makes sounds when crossed, hit or moved. It allows for and activates interaction. It can also be a case of real or improvised instruments (made with atypical or recycled materials) arranged in your space.

Cons: it has to be well thought out, otherwise it will just generates noise. Tools can break.

2.9. A BOX WITH COSTUMES

Or small items, bandanas, cloaks, wigs, masks, hats or a theatrcal make-up kit – can be used to mark teams.

Pros: mobile, reusable for many situations, often valuable for facilitating “teamwork”

Cons: Not all people want to wear used items or make-up

2.10. THE AUDIENCE

Last but not least, an audience is necessary to create a “scene”: their arrangement in space, where they are seated, what they are asked to do, what they are required to wear can create the setting of the installation. Audience involvement is often used by street performers and storytellers - who create semicircles with the audience and also engage it as a “Greek choir”.

Pros: no cost, allows for a large audience, and is very engaging.

Cons: if the scenography does not adequately signal how the audience should move, there is a need for a “conductor”, a “professional animator-artist”, a “storyteller” to direct their motions.

We have reached the end of this list. The “materials” to be taken into consideration could include many other options (metal nets, wooden pedestals or poles, etc.), but the costs would go up a lot.

We mentioned materials that are readily available and come at a reasonable cost.

At this point, you just have to reread what you have created so far. Try to arrange your ideas and sketch out the result (even in a not so perfect way): in the next phase, you will talk about it with your “colleagues”, based on work that is already partly “done”.

To help you, we created a table with the suggestions shown in the video - at the following link: [materials technical table – ludic installation](#)

If you want to try your hand without further suggestions, you will find the same table (empty, to be filled in) on the second page of the form.

3. MAKING A BUDGET

At this point, you are ready to draw up the budget to materialise your ideas, saving the feasible ones and inventing tricks to achieve the best ones.

To do this, we attach a worksheet:

No.	Activity description	Observation
1.	Meetings with the client	Identifying the request and available budget
2.	Inspection	Visiting locations and choosing the best place
3.	Preparation / Brainstorming meetings	Conception, design
4.	Location (where the setting will be created)	Who is in charge of it, (land) rental costs, permits, electricity-generator connections
5.	Permits	Who is in charge of permits for music, readings, performances, royalties, and how much it will cost.
6.	Promotional materials	Who is in charge and how much it will cost
7.	Materials for the installation	Who obtains them + costs (NB: including technical materials)
8.	Setting up the installation	Who is in charge, plus materials and location
9.	Production/printing material	Drawing, design
10.	Transport (van, train, etc.)	Vehicles rental, gas, tickets, transport of materials
11.	Staging the installation	Operational phase: assembly on site
12.	Animation	Who coordinates it: roles and fees
13.	Final meeting with catering	Who is in charge + catering costs
14.	Documenting the event	Who is in charge + costs for press release, photographer, video interviewer and social communication
	TOTAL	

N ^a	Staff involved			Purchased/ made mate- rials	Other costs (rservices/ transport)	TO- TAL
	Unit n ^o	Cost per unit	final cost	cost	custe total	final cost
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						

Use the link to fill it out easily: technical sheet to create a budget – ludic installation

<https://docs.google.com/spreadsheets/d/1kyTvoiVgYodqppsQjE79jsR6k8i37lH/edit#gid=266651175>

Good job!



PART B
LUDIC
EXPERIENCES

LUDIC EXPERIENCES BY APDP

ENTRUDO DESAFIADEIRO (CHALLENGE CARNIVAL)

Images, files and game download:

<https://ludamusproject.wordpress.com/en/activities-and-results/ludic-experiences/challenge-carnival/>

NAME	<i>Carnaval desafiante (Challenge carnival)</i>
SUMMARY: what is your game / game-based experience about	<p>It is a game for two teams (five members who help each other make decisions) to discover the heritage associated with the Carnival festivities in the village of Pitões das Júnias in board game format.</p> <p>Several game based experiences were organised, the first during the Ludamus Erasmus+ meeting in Italy with the associations involved in the project - around 10 people participated in this experience; the second was during the Carnival festivities of the village of Pitões das Júnias, when about 20 people participated; the third was with students from a secondary school, when about 30 people participated and, finally, the rest were not public and about 10 people participated.</p>
OBJECTIVES (related to the heritage elements you want to disseminate)	Promote the intangible, movable and immovable heritage associated with the Carnival season (see the Carnival worksheet).
MISSION OF THE GAME / EXPERIENCE	Reach your opponent's fiadeiro while avoiding being recognized, avoiding the ditches, and avoiding confrontation with the opposing team and, finally, you must get to play as "Careto-farrapão" and have accumulated the most points (points that come from the cards that show the heritage elements in question).
TARGET GROUP (number of players and recommended ages)	Young people over eight years old and without age limit. 8+ 2 players / 2 teams (up to five members each)
HOW TO PLAY: rules	The team who goes second draws 5 cards from the main deck and gives the team who goes first. The team that

	<p>receives the cards has to separate the cards in front of them by images. If they get a consequence card, they must perform the action indicated on it, in order, and discard it in the discard pile.</p> <p>If several identical consequence cards appear in the same turn, they should be discarded in the discard pile. If advantage cards appear, they should be placed separately in front of the player, next to the Carnival cards, and used by the team when necessary. Next, the player rolls the die and advances the respective number of squares, placing their triangle or square in the correct square.</p> <p>After the turn is over, the opposing team takes their turn. The team who just ended their turn has to give them 5 cards. The opposing team also follows the steps described above. During the game, teams must pay attention to the rules by which the cards function and to the special moments that may occur (for example, ending up in a ditch or encountering the other team).</p> <p>The game ends when one of the teams is first team enters their opponent's fiadeiro.</p>
MECHANICS	Roll the dice and move; collect; connect; deck building; accumulate points; negotiate; pattern building; elimination; schedule actions; roles.
DINAMICS	<p>Socialize, compete, reflect, manage, negotiate, confront, ask, order, find, exchange, escape.</p> <p>Reward, strategy, escape (using the dynamics of the caretos, farrapões e guardiões and even the Carnival itself).</p>
COMPONENTS AND MATERIALS	<ul style="list-style-type: none"> - 1 rule book. - 1 game board. - 2 pieces "caretos y farrapões". - 2 pieces "guardião". - 1 paper triangle; - 1 paper square; - "Consequence" cards: 5 return to the previous neighbour; 5 go to the ditch, 5 you are trapped. - "Advantage" cards: 5 get out of the ditch; 5 move forward; 1 Domingo Magro card; 1 filhinho Saturday; 1 Domingo Magro Shepherd's Day card; 1 Entrudo card; 1 careto card; 1 dancers card. - "Entrudo" cards (9 filhoses, 9 caçolas, 9 orelheira, 9 saco da merenda, 9 pão e chouriça, 9 cornos, 9 renda, 9 chocalhos, 9 pau, 9 gancha, 9 moca, 9 roca e fuso, 9 candeia, 9 socos, 9 cântaro de vinho, 9 pote).

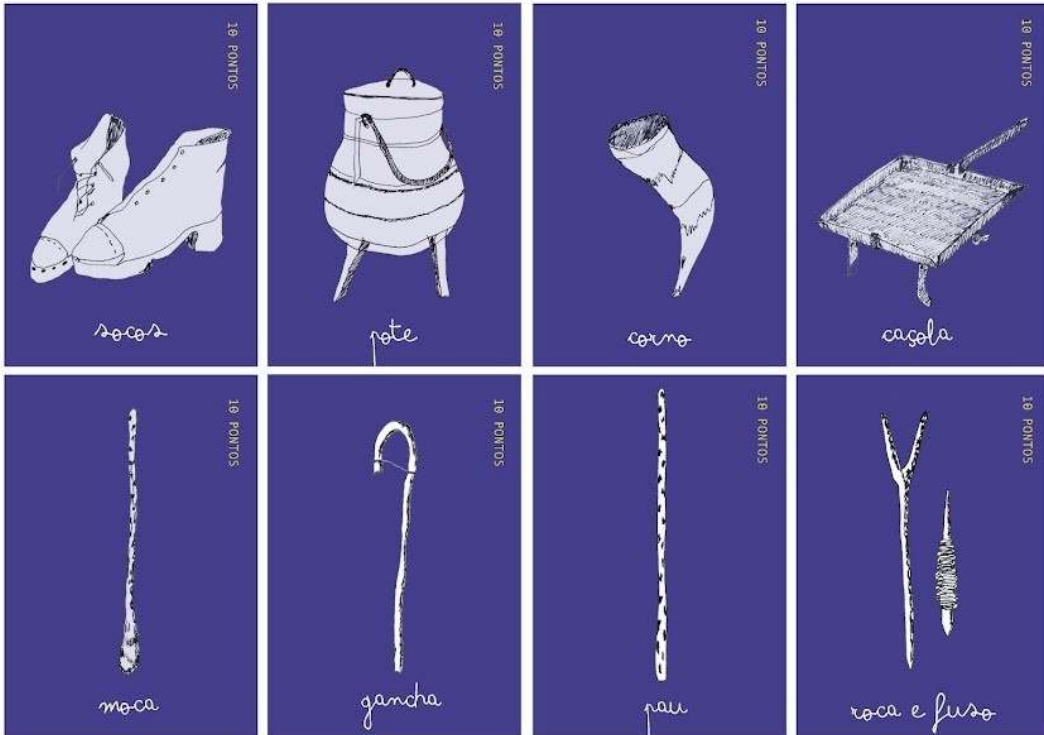
SPACE	Any place that has a base to support the board.
TIMING	20 minutes
NARRATIVE	It's carnival! (Entrudo) In the highlands of Mourela, right next to the Serra do Gerês, lies our beautiful village where you can feel the bustle of caretos and farrapões. They are mobilized by the tradition of the fiadeiros and their objective is to tour the village and participate in the fiadeiro celebrations without being recognized.
SETTING THE SCENE, AESTHETICS	<p>The minimum age to play is eight years old and there is no superior age limit, so we think the illustrations should be attractive for any age.</p> <p>Our game board shows the streets of the village and when viewed as a whole it looks like a carnival mask. In the centre of the board there's the village, with the game itineraries and also some heritage interest points (immovable heritage).</p> <p>The cards illustrate elements of the cultural heritage (intangible, movable and immovable) related to the Carnival festivities.</p>
HOW CAN THE GAME/EXPERIENCE BE USED OR TRANSFERRED	<p>This game can be applied anywhere that has a festivity involving cultural heritage.</p> <ol style="list-style-type: none"> 1. Carry out a historical study of the festivity. 2. Identify cultural heritage. 3. Briefly but precisely describe each heritage element in question. 4. Use the anthropological method to describe the dynamics of the festivity. 5. Brainstorm ideas to get ideas from the local community itself. 6. Prepare a description of the entire festivity that can be consulted through a QR code. 7. Adapt the dynamics of the festivity to all components of the game. 8. Come up with the design of the components. <p>A game of local interest, for schools, for people interested in cultural heritage and its dissemination and, finally, for tourists.</p>
DESCRIPTION OF THE CREATIVE PROCESS AND IMPLEMENTATION: difficulties, solutions, advice...	Pitões das Júnias is a mountain and rural village with a vast cultural heritage. From the beginning, we tried to find out which games exist that aim to disseminate heritage in the area. We discovered that no such games existed in the area yet. The second phase was the difficult choice of the heritage to be promoted. We decided on the Carnival

festivities because it involves several types of cultural heritage, because it was already in danger of disappearing and, finally, because we intend to propose this festivity for the National Inventory of Intangible Cultural Heritage. We needed all the information about its dynamics. To do this, we went to talk to the local community (people of different age groups) and asked them to describe the Carnival. Starting from the contact with the local community and a bibliographic research, we elaborated an anthropological sheet of the festivity. It was then that we decided we wanted to include all the heritage elements associated with the festivities and not just the masks.

To choose the name we brainstormed with the local community and came up with it together. It was the dynamics of the "Caretos-farrapões" that inspired us for the main objective of the game, namely to arrive smoothly at the opponent's "fiadeiro". Coming up with the design of the entire game was a progressive and difficult endeavour. Initially we designed a board that portrayed the environment of the village, the streets and the immovable heritage, as well as cards that portrayed the rest of the heritage elements. But going forward with the creation of rules, mechanics and dynamics, we changed the board so that it shows the streets of the village while also illustrating the mask used by the "caretos" and "farrapões". The choice of darker colours represents the fact that the dynamics of these festivities occur mainly at night.

Creating the rules for the game was not easy – we changed the rules several times to make everything work. We tested the game several times with several participants. We always expected the harshest criticism, only then can we evolve and improve our game. In the end, the final rules include how to prepare the game, how to play it, how the Consequence and Advantage cards work, what players should do in special moments, and how the game is won. We thought playing the game once would take 45 minutes, but with all the changes we made, we found that it's a fast game, it takes a maximum of 20 minutes. Which makes people want to play it again.





guardião



guardião



careto e farrapão



farrapão e careto







LOBOS TE COMAM (WOLVES WILL EAT YOU)

Images, files and game download:

<https://ludamusproject.wordpress.com/en/activities-and-results/ludic-experiences/wolves-will-eat-you/>

NAME	<i>Wolves will eat you</i>
SUMMARY: what is your game / game-based experience about	It is a breakout game. Two mobile phones, comfortable clothing, walking shoes and insect repellent are required. Players will have to walk through some grazing paths. There is no time limit to get the score that will allow participants to win the challenge since we want players to enjoy all the rich cultural and natural heritage and feel no pressure. Codes are obtained by solving challenges proposed through QR codes and Google forms. The game was played for the first time on April 15, 2022, by members of APDP.
OBJECTIVES (related to the heritage elements you want to disseminate)	Disseminate information on immovable heritage elements (wolf den, old village of Juriz, symbol of Osseira, monastery of Santa Maria das Júnias), intangible heritage elements (songs, riddles and local expressions) and, lastly, natural heritage elements (oak groves, riverside forests, wild flora and traces of wild fauna in the territory).
MISSION OF THE GAME / EXPERIENCE	Much of the heritage of the village of Pitões das Júnias is found in the mountains, whether it is its natural or cultural wealth. In fact, natural and cultural heritage are intrinsic. Pitões das Júnias is one of the places on the Iberian Peninsula where certain species of wild fauna from Europe are preserved, such as the Iberian wolf. This animal with a vivid presence in this territory lives alongside the shepherds of Pitões das Júnias - livestock producers who have always known how to do their job without interfering in this animal's life. On an international level, the Bern Convention designates this species as strictly protected, as does the Law for the Protection of the Iberian Wolf in Portugal (Law no. 90/88 of August 13 and Decree-Law 139/90 of April 27). Therefore, the mission of our game is to once again raise awareness about this species and save the "wolves from poachers" (the story of our game).
TARGET GROUP (number of players and	The path is almost always along trails, and it is steep and irregular in some places. Therefore, people must

recommended ages)	be sufficiently mobile and have endurance suitable for walking in the mountains. The recommended minimum age is 12 years old and has no upper limit; it is essential that people respect the conditions described. Since these paths are located in the Type I Partial Protection Zone, the maximum possible number of people is 9.
HOW TO PLAY: rules	<p>There will be a QR code in all public places of the village (Ecomuseum, Local Council, Iberian Wolf Research Centre, restaurants, cafes and bakery). People interested should read the information to get a brief description of the game, indicating that they must create an email to play and receive the location of the first challenge.</p> <p>Players must comply with all demands and be well informed.</p> <p>Now it's time to enjoy solving the challenges and, in the end, check the score.</p>
MECHANICS	Unlock content; challenge; share knowledge; gain points; history; progress; theme; signalling.
DYNAMICS	Socializing, orientation, meet, listen, express, create, reflect, collaborate, pursue and find.
COMPONENTS AND MATERIALS	Internet access, at least two mobile phones with access to email and enough battery for a 4,5 hour tour, QR code reader, apps: Google Maps and Google Forms.
SPACE	Start and finish points are in the village of Pitões das Júnias. The route is located in the Serra do Gerês mountains, in the Pitões das Júnias area.
TIMING	No time limit so that people can contemplate all the heritage elements.
NARRATIVE	<p>Someone heard a conversation in the village saying that the wolves are in danger because there are poachers in the mountains. They want to kill them and sell their fur in Amsterdam. Therefore, it is urgent to save the wolves of Pitões das Júnias.</p> <p>The population does not agree with this massacre and will do everything in their power to prevent it. Do you want to help stop the hunters?</p>
SETTING THE SCENE, AESTHETICS	The game is entirely online, and it provides photos of the places to visit and the respective fauna and flora.

<p>HOW CAN THE GAME/EXPERIENCE BE USED OR TRANSFERRED</p>	<p>As we have already mentioned, this game targets the natural heritage and the tangible and intangible cultural heritage of a village located in a European national park. Here efforts are made to reduce the harmful effects caused by human activity on wildlife, in this case, the Iberian Wolf - a strictly protected species, but the game's target can also be another animal species or even wild flora. Unfortunately, as we all know, there are many other places in Europe and even the world where this happens, and it is not limited to villages as this phenomenon can also be encountered in cities. Therefore, we recommend the following steps:</p> <ul style="list-style-type: none"> • Creation and implementation involve research on the intangible and natural heritage of the places to be visited in the mountains; • Choose what heritage to promote; • Record all data provided by the population; • It is essential to carry out a reconnaissance of the entire itinerary, marking the points of interest and linking them with the tangible and intangible natural and cultural heritage; • Ensure that participants have access to mobile data throughout the itinerary; • Provide a map of the itinerary or geographic coordinates; • Photograph the places along the itinerary that may be of interest in order to inform the players; • Create several emails, necessary for the proper functioning of the breakout game and to contact the participants automatically; • Create challenges that promote the heritage in question and introduce them in Google forms, so that you can share them through QR codes that will be sent through various emails to the players; • Distribute the QR codes throughout all the public places of the area and nearby territory; • The first QR code must provide most of the information about the game: where it starts, itinerary, conditions for participation;
<p>DESCRIPTION OF THE CREATIVE PROCESS AND IMPLEMENTATION:</p>	<p>We decided to create a breakout game because the place where we live allows wide dissemination of heritage, and part of it, as is the case of the mountain range in Pitões das Júnias, is less accessible but</p>

difficulties, solutions,
advice...

fascinating. It is a known tourist place and people sometimes travel many hours to see these mountains. What could be better than a challenge out in the open air, so people have a better chance to get to know and understand this heritage. The first difficulty was that none of us had ever developed a breakout game. To train, we started by designing a smaller breakout game elsewhere - the Bô breakout game - which aimed to promote heritage and formal learning in a school in the Bragança district. Once the type of heritage was selected, we had to create a story for the game. Then we reinvented challenges with mainly intangible heritage in mind, since the rest of the heritage elements are shown in situ.

A new question arose: if this was to be an online game, how would we inform people about it so they would know to play it. We decided that all the initial information would appear in a QR code and it would be promoted in Pitões das Júnias and in all other places in the municipality that could advertise it.

In fact, everything works through emails specifically created for each challenge, Google forms and QR codes.

Another question was how would the game continue? It is essential that in the group of participants, there are always two mobile phones able to read these QR codes and, preferably, at least two people since it is a mountain path and players are advised not to hike alone.

At this point in the process it became essential that we go to the area where the game would take place to check the entire itinerary, to see if there is a signal in all locations and finally, to identify the locations in order to provide information to the players.

Our biggest challenge was getting people to go to the places we suggested, so some challenges are just descriptions of what the players see at that moment. If people do not go, the intention to promote the heritage will continue to exist.

Once this reconnaissance is complete, it is necessary to play the game more and more times to identify problems and find new solutions.









LUDIC EXPERIENCES BY LA CORTE DELLA CARTA

GERUNDIA - THE LAND OF WATERS

Images, files and game download:

<https://ludamusproject.wordpress.com/en/activities-and-results/ludic-experiences/gerundia/>

NAME	Gerundia - the land of waters
SUMMARY: what is your game / game-based experience about	This is a cooperative and strategic boardgame about the intangible cultural heritage of the Lombardy region. The game combines geography, tradition and culture in a legendary narrative context, which creates an inseparable link between environment and folklore.
OBJECTIVES (related to the heritage elements you want to disseminate)	<ul style="list-style-type: none"> • Rediscover the legend of the Tarantasio Dragon and valorize a large number of little-known Lombard folk tales; • Disseminate information on the physical geography of the region, with a particular focus on waterways; • Increase knowledge about historical and cultural elements of cities and towns in the region; • Convey a collaborative way of sharing skills and knowledge through teamwork.
MISSION OF THE GAME / EXPERIENCE	As the 4 sons of the dragon, the players must work together to make the ancient Lake Gerundo reappear in order to appease the wrath of the dragon Tarantasio and make him go back home before it is too late.
TARGET GROUP (number of players and recommended ages)	<ul style="list-style-type: none"> • Number of players: 4, or 4 teams of several players • Age: from 8 years old upwards

<p>HOW TO PLAY: rules</p>	<p>Preparation:</p> <ul style="list-style-type: none"> • print the material and assemble it according to the instructions; • choose 4 out of the 6 dragons based on their special powers; • position the pawns and scrolls (covered) on the board by randomly generating the positions with the app. <p>Game Flow: Phases of the game:</p> <ol style="list-style-type: none"> 1. Question and answer: the player answers a question about the city she is in; if the answer is correct, she gets an action point that she can spend during her turn. 2. Actions: the player chooses which actions to perform based on their available action points. Possible actions are: <ul style="list-style-type: none"> • move (advance one space unit), • build (build a canal connecting two neighbouring cities), • interact with an object (collect or open the parchment), • extinguish a fire. <p>At the end of each round, the Tarantasio dragon performs an action generated by the app. Possible actions are:</p> <ul style="list-style-type: none"> • fire: Tarantasio sets one of the cities on fire • tornado: dragons are wiped out and forced to switch positions on the map. <p>When a player arrives in Lodi with the parchment, their game turn changes: after answering the question, they can take actions that help the other players reach the city (for example, build a bridge).</p> <p>You lose the game when:</p> <ul style="list-style-type: none"> - One of the dragons loses all lives. - The goal is not reached within 7 rounds. - 3 cities are on fire at the same time. <p>The game is won when all players reach Lodi with their scroll within the allotted time.</p>
<p>MECHANICS</p>	<p>Quiz in an app, time limit, action points, connections, map deformation, point to point movement, random production, line drawing, modular board, turn order: random, variable player powers, area majority/influence, events, rapid movement.</p>

	Source: https://boardgamegeek.com/browse/boardgamemechanic
DYNAMICS	Cooperate by strategising, problem-solving, answer questions, probabilistic calculus, map space projection, active imagination.
COMPONENTS AND MATERIALS	<ul style="list-style-type: none"> • 1 board (4 A4 sheets) + 1 A4 sheet for character cards, place cards, scrolls, fires, hourglass • smartphone or other device connected to the internet for the game app (app link) • pencil and eraser • scissors and glue stick/scotch tape
SPACE	The game requires a closed and relatively quiet space, with various surfaces and seating such as tables and chairs or sofas and carpets.
TIMING	45m-1h30m
NARRATIVE	<p>“Legend has it that in medieval times the dragon Tarantasio terrified the inhabitants of Lake Gerundo, located between the Lodi area and the lower Cremona area and that he devoured children.</p> <p>The Visconti drained the Gerundo Lake to drive out Tarantasio, a presumed enemy of the Lodi population. The land was reclaimed by the monks and buildings will be erected here: this unleashes the wrath of Tarantasio, who, without his home, wanders around Lombardy, setting fire to the cities.</p> <p>To resolve the situation, the four children of the dragon will have to retrieve the four elemental scrolls and bring them all together to Lodi ”</p> <p>The game is based on the legend of the dragon Tarantasio and on folk tales from the Middle Ages that had significant political, cultural and environmental resonance throughout Lombardy, becoming a distinctive part of the collective imagination of the first centuries of 1000 AD. We chose to start from this story and gradually modify and adapt it to the game mechanics, as they were progressively tested; the immersive narrative conveys the story, and the game experience takes place in a context that not only requires strategic cooperation, but it is also an imaginative product that combines fictional elements with geophysical</p>

	realities.
<p>SETTING THE SCENE, AESTHETICS</p>	<p>The aesthetic that permeates both the narrative and the actual game material is medieval, relating to the historical period in which the legend catapults us. The medieval aesthetic is clearly evident in the graphics of the board, as well as in the design of the cards, tokens and symbols.</p> <p>We tried to make the geographic relevance of the regional map coexist with the functionality of the game flow: we chose to use rivers as the primary transport route, but we had to correct their reach or the position of some cities.</p> <p>The use of paper as the main material makes the game board fragile and unstable, so it is necessary to have strong support materials to fix it in place.</p> <p>Some tokens need to be folded to make them three-dimensional, so players can differentiate them from other symbols on the map.</p>
<p>HOW CAN THE GAME/EXPERIENCE BE USED OR TRANSFERRED</p>	<p>Gerundia lends itself to being re-purposed for different territories or environments: the game's basic structure can be easily adapted according to cultural or geographical needs so that it promotes specific aspects of the heritage of a chosen region.</p> <ul style="list-style-type: none"> • Choose the geographical area. • Identify the intangible heritage to promote. • Create a simplified map with various points of interest. • Carry out in-depth research work and gather information and traditions about the territory, following the direction of the chosen story/legend/tale • Build a creative and functional aesthetic framework where the mechanics and dynamics of the game can unfold. <p>It may be necessary to reformulate the questions and adapt them to different cultural contexts. They could valorize, for example, the historical aspect or a certain cultural phenomenon, or they could simply need to address a different target group (foreign players who do not know the traditions and territories in question, small children, etc.).</p> <p>The structure of the game can be translated into a different type of support, such as that of a videogame, which we also</p>

	<p>considered thanks to a proposal from a young computer scientist with whom we collaborate; in this regard, it's useful to evaluate the feasibility of specific dynamics and the functionality of certain mechanics, which could be revised or partially eliminated.</p> <p>A game structured like Gerundia can undoubtedly be transformed into an experience for multiple players, suitable for as many players, for example, as there are children in an elementary or middle school class; they would be divided into 4 teams made up of many members; to tell the selected legend or tradition, it is also possible to translate the narrative of the game into a theatrical performance, for example using the cantastorie technique.</p>
<p>DESCRIPTION OF THE CREATIVE PROCESS AND IMPLEMENTATION: difficulties, solutions, advice...</p>	<ul style="list-style-type: none"> - Choosing the aspect of the intangible cultural heritage to be valorized was carried out through collective brainstorming. We identified the culture of the Lombard waterways as the first significant element. - Choosing to promote a little-known legend, that of the dragon Tarantasio, and linking it to the history of the ancient Lake Gerundo. - Creating a draft map of Lombardy focusing on Lake Gerundo and currently existing regional rivers and lakes. - Trying to perfect the map, referring to games such as "Scotland Yard" and "Labyrinth". - Detecting the inadequacy of the mechanics of the aforementioned games followed by an in-depth meeting with the members of the "Senzacoperchio" association for an applied training in order to develop and implement other practical game mechanics. - Gathering knowledge, focus and gaming experience on "Pandemic" and other boardgames selected by experts based on our requests on specific mechanics. - Analysis of the Pandemic model and numerous attempts to reproduce it with the appropriate adaptations. - Reworking the main game mechanics, streamlining obstacles, creating a better definition of the itinerary, introducing the app and historical-geographical questions. - Redefining the game rules based on the new mechanics. - Conducting multiple tests with Senzacoperchio, friends and associates. - Improving the game based on the feedback received from the players and the dynamics we observed during the tests, with particular attention to the advice of the association's experienced players.

- In-depth study of the cultural heritage elements to be introduced in the questions (in-depth research on written or online information sources, using the internet or municipal libraries, including encyclopedias, monographs and collections of folkloristic productions).
- Adapting the final graphics to the game mechanics, with some modifications.
- Carrying out further game tests in order to collect data such as the average duration of a game, the frequency of wins and the strategies implemented by the players.
- Applying a questionnaire to players in order to receive detailed and complete feedback.

Advice, difficulties and solutions

- We advise anyone who tries to create a boardgame to work with a team that is not only enthusiast but also knows very well the technical use of game mechanics.
- One of the advices that Senzacoperchio association gave us was to find a solution that requires printing as little material as possible to make the game sustainable both on a practical and environmental level.
- After working a lot on the creative part of the game, when presenting it to experienced players, it was necessary to simplify it and take a step back, starting from the basic mechanics. Giving up many ideas we were fond of and replacing some elements with others was challenging but essential. It is important to accept advice and better evaluate the applicability of certain rules.
- Creating a game like Gerundia allowed us to compare our different abilities and use them to obtain a functional game based experience: it is not a simple dynamic within a team that varies in age and experience, but with a firm awareness of one's limits and a recognition of the strengths of others, any team can build a game that excites, entertains and educates.









LA VALLE DEI MULINI (VALLEY OF THE WATERMILLS)

Images, files and game download:

<https://ludamusproject.wordpress.com/en/activities-and-results/ludic-experiences/valley-of-the-watermills/>

NAME	Valley of the Watermills
SUMMARY: what is your game / game-based experience about	It is an immersive game-based experience dedicated to highlighting the cultural heritage of watermills located in Valchiavenna, Lombardy. The game was created as part of an experimental training weekend for educators and animators.
OBJECTIVES (related to the heritage elements you want to disseminate)	<ul style="list-style-type: none"> • Valorize the agricultural culture of northern Lombardy by rediscovering the heritage of watermills and of the miller profession; • Reduce the cultural gap between new and old generations and share heritage elements with local young people born after 2000; • Highlight the differences in the uses and practices of not so many years ago and compare them to the current ones; • Reflect on the cultural and social effects of the closure of some mills, linking it to the lowering of the aquifer's levels in the valley due to climate and environmental changes.
MISSION OF THE GAME / EXPERIENCE	Complete the recreation of the corn production phases by solving the proposed challenges with the highest possible number of points.
TARGET GROUP (number of players and recommended ages)	<ul style="list-style-type: none"> • number of players: at least 2 teams of 4-8 players • age: from 6 years old upwards • teams composition: heterogeneous in terms of age and origin (each team should have at least one member who is familiar with the place)
HOW TO PLAY: rules	<p>Valley of the Watermills is divided into several sections that follow the production phases of corn: sowing, harvesting, drying, threshing-shelling-cleaning, weighing, grinding and sieving the flour.</p> <p>Apart from these phases, the game contains a moment of exploration of the territory through a "photo hunt" of some highlighted elements and the task of taking a photo of the team in action for each processing phase, which is evaluated according to criteria such as originality and relevance.</p>

	<p>Each phase is led by a guide present on-site and is accompanied by different types of tests such as quizzes, searches for hidden places/objects, and sensory and artistic tests. After each test, a score is given, and teams are given chestnuts; at the end of the game, the team with the highest number of chestnuts wins.</p> <p>Each team is followed by a “farmer”, a tutor who, at the end of each test, delivers the next clue and accompanies the group around the place.</p>
MECHANICS	Photo treasure hunt, point game, time pressure, various quizzes, multiple maps, paper and pencil, minigames, team vs team.
DYNAMICS	Sensory exercises and stimulation, cooperation between team members, task division, artistic and musical expression, interaction with local people, manual agricultural activities, interaction with tools and machinery, exploration of spaces.
COMPONENTS AND MATERIALS	<p>materials for artistic and musical challenges (e.g. glue, scissors, pens, pencils, scotch tape, thread, beads, musical instruments)</p> <p>electronic devices (printer, PC, smartphone, camera)</p> <p>raw materials (seeds, chestnuts, different types of flour, corn on the cob)</p> <p>machinery and tools (pannier, antique scales, sieve, shelling machine, hoes)</p> <p>set-up material (opaque fabrics, wooden panels indicating the game areas, posters)</p> <p>paper-mâché puppet</p> <p>kit for teams (jute bag to collect chestnut points, map of Valchiavenna, map of the game area).</p>
SPACE	<p>Location: Val Chiavenna, Province of Sondrio, Municipality of Prata Camporaccio, part of San Cassiano.</p> <p>Valley of the Watermills is an itinerant game, therefore, it takes place in different places according to the challenges in progress: players move between cornfields, paths alongside canals, workrooms, cellars, mills, courtyards.</p>
TIMING	2h30m - 3h
NARRATIVE	We decided to use an animated puppet that

	<p>impersonates the old miller running the mill to narrate in a theatrical manner the story of his family, the Fallinis.</p> <p>We were then honoured to receive the help of two members of the Fallini family: Mrs. Alma and her son Fabio. The two expert millers passed on traditions and knowledge by sharing stories, singing folk songs and explaining during the game how certain tools and machinery function.</p>
<p>SETTING THE SCENE, AESTHETICS</p>	<p>We tried to give uniformity to all the internal and external environments in which the game takes place, making sure that the set-up did not compromise the natural environment. The use of plywood signs decorated by us to signal each phase of the game allowed us to create an easily recognisable and coherent path. The use of clearly visible “peasant” clothing with minor variations depending on the role of the animator also contributed to the setting. The mix between the stillness of the mills and the innovative elements of our ludic installations (maps, various decorations, musical instruments) awakened a place full of opportunities and keeper of traditional and sustainable knowledge.</p>
<p>HOW CAN THE GAME/EXPERIENCE BE USED OR TRANSFERRED</p>	<p>Valley of the Watermills could be re-purposed in an urban setting such as that of a town or city square with the appropriate adaptations. In order to reproduce some of the challenges, it would be necessary to build smaller scale models of some of the machines (for example, build a miniature mill with a coffee grinder). We recommend making up for the lack of deeply rooted settings by creating enclosed and immersive spaces for sensory experiences. If possible, we recommend organising it as a competition between two teams, but the game can also be played by a single team. The photo hunt cannot be done unless there are heritage elements nearby. The objective of the experience is, in short, to evoke the typical environment of the heritage that you want to valorize: in our opinion, it is possible to do this and fully respect the heritage of an area.</p> <p>The game can be transferred without substantial modifications to other valleys or to any other environment that preserves a heritage similar to that of the mills of San Cassiano: what this experience should preserve, beyond the game-based and artistic valorization of the heritage, is the central position of the sensory</p>

	<p>interaction, creating a meeting place between generations – the young and the elderly, and initiating a strong wave of game-base and environmental education.</p>
<p>DESCRIPTION OF THE CREATIVE PROCESS AND IMPLEMENTATION: difficulties, solutions, advice...</p>	<p>During the exercise proposed by the training session on game-based installations, our group set to work on trying to imagine an immersive game-based experience: it is from this exercise that we started to develop the first project; we decided to start from this foundation to bring our game to life;</p> <p>the first place identified was the Monza Park, intending to promote the cultural heritage linked to the use of mills and canals;</p> <p>in order to get to know the place we intended to valorize, we turned to Guidarte association, who led us to discover the artistic and cultural heritage of the Park;</p> <p>therefore, we structured a project to share with the entities already active in the area, but after a few exchanges, we realised that the many activities and initiatives already planned in the Park made collaboration difficult;</p> <p>we chose to keep our focus on the mills and the waterways but to focus on a less valued place that is not so rich in initiatives and economic resources: we identified the no longer active mill of the Fallini family in the village of San Cassiano from Prata Camporotondo in Valchiavenna;</p> <p>a first visit allowed us to study the heritage of the area, get to know the family and interview some of its members to gather information on the traditions related to corn processing and rural culture;</p> <p>next was a phase of redesign and readjustment of the game to the new environment;</p> <p>we decided to carry out a training session open to educators and animators outside the association on the weekend of the event, co-designing the game on the spot and co-creating the scenographic material in a theoretical training framework.</p> <p>Training weekend First day:</p> <p>Morning = recovering materials, theoretical micro-training and inspection of the spaces with final mapping. Afternoon = cleaning and preparing the spaces, detailed planning of the phases of the game starting from the project created by the association's team in the previous months.</p>

Evening = assigning roles and writing the narrative script for the papier-mâché puppet.

Second day:

Morning = creating the last part of scenographic material, final preparation of the space, setting the timing and order of the team challenges to avoid overlapping.

Afternoon = running the game with local and external participants from urban contexts.

Evening = chestnuts and interviews with the participants

Third day:

Morning = reorganising the spaces and spending time with the Falini family.

Afternoon = internal feedback within the group, evaluation of the game and the training course, brainstorming on possible adaptations for urban contexts.

A criticism that emerged relates to the involvement of entities active in the area, which was only partially achieved. The reasons were linked both to the short timeframe resulting from the decision to move the game to another location, and to the family's request to carry out an initial trial and involve local entities later when the event is proposed again.

Having to make changes as you go can be uncomfortable and counterproductive, but we would like to emphasise that a deviation from the path can often lead to unexpectedly better situations. Creating Valley of the Watermills allowed us to build an experience piece by piece that has gradually become homogeneous, which was just like our team, who originally was divided into separate groups, then came together to cooperate in the best possible way, managing to organise an efficient training on several levels: both internally for our association, between experts and young educators, and externally, towards a community rich in culture.







LUDIC EXPERIENCES BY UNIVERSITUR

HERITAGE HUNT - THE PRAYER

Images, files and game download:

<https://ludamusproject.wordpress.com/en/activities-and-results/ludic-experiences/the-prayer/>

NAME	<i>Heritage Hunt – The Prayer</i>
SUMMARY: what is your game / game-based experience about	<p>A famous statue - The Prayer by Constantin Brâncuși – has just been stolen from the National Museum of Art in Bucharest and it's up to you to find it!</p> <p>This is a cooperative game which introduces you to a mystery to be solved. Players will follow the trail of an art thief by solving puzzles and logic games and deducing clues in order to find the missing statue. The clues will take the players on an imaginary journey through Bucharest, touching on some of the city's most important cultural and historic landmarks.</p>
OBJECTIVES (related to the heritage elements you want to disseminate)	Stimulate the interest of the target group for the history and cultural heritage of Bucharest in a fun and engaging way.
MISSION OF THE GAME / EXPERIENCE	A famous statue has just been stolen and it's up to you to find it by solving puzzles and clues left behind by the thief.
TARGET GROUP (number of players and recommended ages)	<p>General target group: anyone aged 14+</p> <p>Individual or in a small group (max. 4)</p> <p>Specific target group: We created the game having in mind first year students who attend university in Bucharest, as well as Erasmus</p>

	<p>students who spend a semester or two in Bucharest. What most of these students have in common is that they are new to Bucharest and will probably be curious about their new city.</p>
HOW TO PLAY: rules	<p>Play the game wherever you want, alone or with friends. The cards are numbered and they should always be arranged in a deck in numerical order. Set the deck face up with card number 1 on top. Don't peek – there might be spoilers! Set the answers card aside, face down, in case you need it. Start by reading the first card and solving the puzzles and logic games one by one. Scan the QR codes if you're curious to know more about the places you "visit" during the game. Keep score by keeping track of the number of answers you don't get right (use pen and paper or a note taking app on your phone). If you're stuck, you can check the answers card. When you finish the game, check your score against the detective tiers to see how well you did. When you are done playing, rearrange the cards back in the deck numerically and pass them on to a friend or colleague so they might enjoy the game too.</p>
MECHANICS	Puzzles, deduction
DINAMICS	Solve puzzles, deduce clues
COMPONENTS AND MATERIALS	<p>Cards Required: pen and paper to keep score (or a note taking app on your phone).</p> <p>Optional: Smartphone with an app to scan QR codes. Players can scan the QR code present on some of the cards to find out more about the landmarks they "visit" through the game. However, this is not necessary to finish the game and it does not affect the outcome in any way.</p>
SPACE	It can be played anywhere. It doesn't even require a table.
TIMING	~1 hour
NARRATIVE	A famous statue - The Prayer by Constantin Brâncuși – has just been stolen from the National Museum of

	<p>Art in Bucharest and it's up to you to find it!</p> <p>Each puzzle you solve will help you pick up the trail of the thief and recreate their itinerary through the city, bringing you one step closer to where they hid the statue.</p>
<p>SETTING THE SCENE, AESTHETICS</p>	<p>We chose a simple and coherent design for the cards and aimed for a "clean and clear" layout that will support the visual and written information rather than take centre stage.</p> <p>We chose a warm colour palette with soft tones of grey, brown and gold in order to provide good visual contrast with the text and images and make the cards easy to read.</p> <p>The golden brown graphic elements aim to bring a hint of vintage nostalgia, as the swirly model somewhat resembles some of the wrought iron decorative elements present in the architecture of the Historic City Centre.</p> <p>The combination of brown background and white lettering is also reminiscent of the brown tourist signs that are used worldwide to point visitors to tourist destinations and cultural attractions.</p> <p>Because we are dealing with recognizable city landmarks, we chose to use photographs instead of illustrations, so that the card deck can also serve as a visual guide to Bucharest for those who don't know the city.</p> <p>The cards convey information through four main elements:</p> <ol style="list-style-type: none"> 1. The number and title on top - indicates the order in which the cards should be read. 2. The image/photograph in the centre – displays the player's current location in-game and the puzzles/clues to be solved. 3. The QR code under the image – optional to use, leads to further information about the landmark presented on the card. 4. The text bubble on the bottom – displays very brief information about the landmark presented on

	<p>the card or about the current puzzle/clue.</p> <p>The language used for all text is simple, friendly and direct, so it can be understood by the most diverse players.</p> <p>The cards only have information on one side. This is to make them easy to use in a print and play situation.</p>
<p>HOW CAN THE GAME/EXPERIENCE BE USED OR TRANSFERRED</p>	<p>The concept of the game can certainly be adapted to any local reality, although the narrative and in-game itinerary would have to be entirely redesigned to fit in. Some of the puzzles and logic games are site specific, so they would have to be replaced.</p> <p>To come to the aid of anyone who would like to adapt this game for their own city, we can offer the Canva template of the cards for free, which would make it considerably easy for anyone to adapt it by simply replacing the elements that need to be changed (images, text, QR codes).</p> <p>Thinking about the future and sustainability of the game, we feel like the current narrative can be easily transferred into a live heritage hunt game that would encourage players to actually follow the itinerary we propose in-game, solve puzzles and gather clues on site, while having a first-hand experience exploring the cultural heritage of Bucharest.</p>
<p>DESCRIPTION OF THE CREATIVE PROCESS AND IMPLEMENTATION: difficulties, solutions, advice...</p>	<p>Our creative process started by playing many tabletop games and paying attention to the mechanics and dynamics. We noted the ones we enjoyed the most and the ones we thought could be interesting to use keeping in mind our mission to promote cultural heritage.</p> <p>We started out with two target groups in mind – kindergarten children and University students – and kept brainstorming concepts and ideas for both.</p> <p>As we are Human Geography alumni, we eventually got excited by the idea to build an escape type game for first year Tourism students. Our initial aim was to get them acquainted with the cultural heritage of Bucharest, while also illustrating an innovative way of interpreting heritage, which would blend well with their studies.</p> <p>However, as we kept working on the concept, we</p>

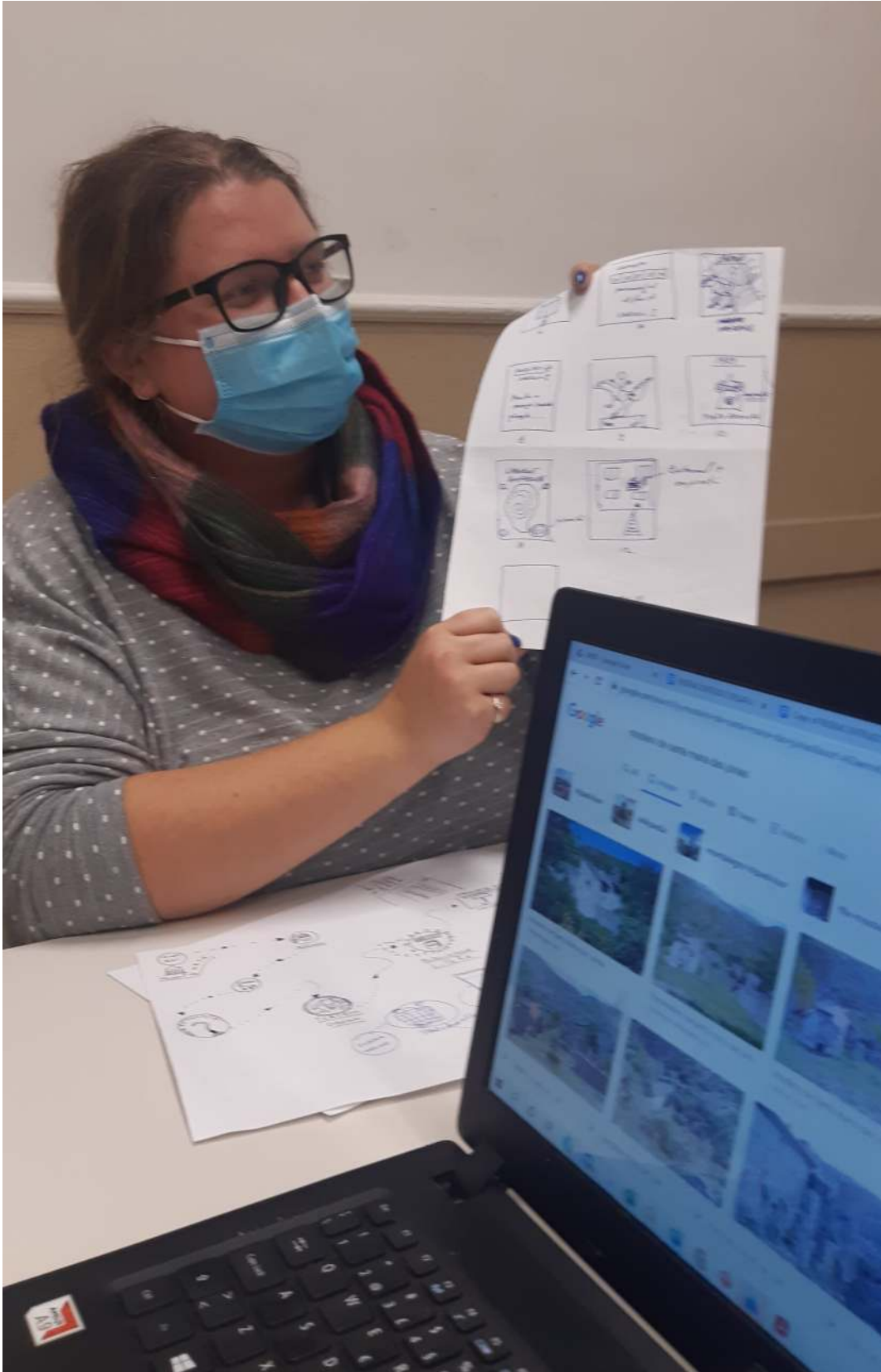
realized it would be very fitting for any first year student attending university in Bucharest, as well as for Erasmus students of all ages who only spend one or two semesters here.

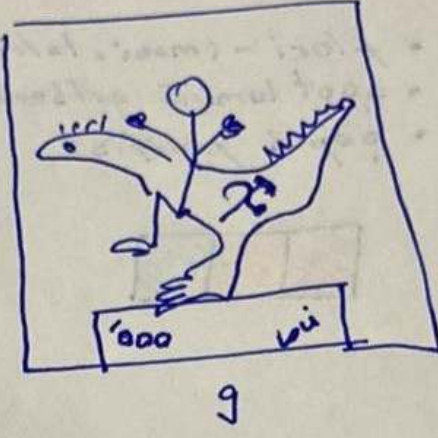
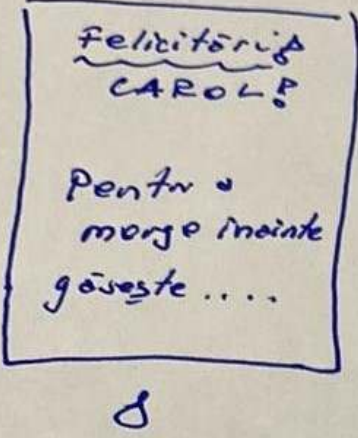
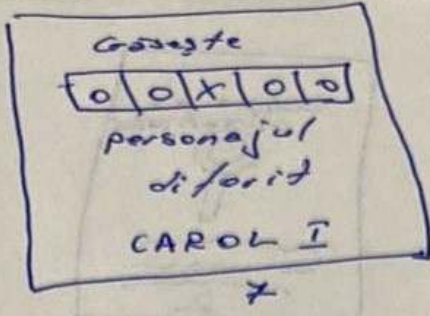
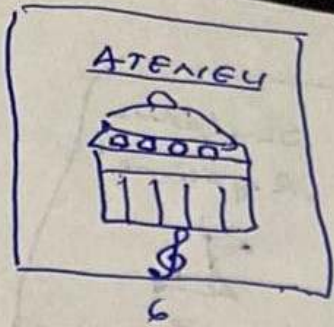
Designing the narrative of the game was the most difficult part of the creative process. We enlisted the help of our partner Philmys Cultural Association and had numerous brainstorming sessions and just as many potential narratives until we finally settled on the one that made the most sense for us. This process took weeks. Eventually, we realized it's helpful to start any brainstorming by playing a short escape/break out/mystery game to set the creative mood.

Deciding on the puzzles and logic games was also quite difficult, as it was also a matter of what the graphic designer could convey with the tools and skills at hand. For this reason, deciding the puzzles and clues went more or less in parallel with the graphic design. However, the narrative was already decided, which made the entire process much clearer. We recommend that you decide the narrative first in order to keep grounded and not forget your end goal.

Because some of the puzzles and clues are directly connected to Bucharest landmarks (local knowledge), we thought it was important to test them both on Romanians and foreigners, as we were afraid they might be too easy for Romanians and too difficult for foreigners.

One potential drawback we had to think about is that the game has zero replayability – you can only solve the mystery once. However, thanks to our very specific target group, we are optimistic about the game's sustainability. In Bucharest, every Faculty has a student association and they are all interconnected under the umbrella of the University of Bucharest Student Association - ASUB. Therefore, all we need to do to ensure the game's sustainability is present it to ASUB and propose that our game is offered as part of the welcome activities for new students. Given our tight connection to the University, we are optimistic about this scenario.





Piramida



ACTIVE HERITAGE

Images, files and game download:

<https://ludamusproject.wordpress.com/en/activities-and-results/ludic-experiences/active-heritage/>

NAME	<i>ACTive Heritage</i>
SUMMARY: what is your game / game-based experience about	<p>The experience aims to reveal various heritage elements to residents and tourists in a playful, interactive manner. It involves creating an itinerary of brief site-specific performances that small groups of people go through. Therefore, there are two types of beneficiaries:</p> <ul style="list-style-type: none"> - the ones who create the performances (referred to as creators) - the ones who participate as spectators (referred to as spectators). <p>The experience was initially created for university students who study tourism and heritage and took place in Băile Herculane, a small resort town filled with neglected cultural heritage, which is now in very bad condition. However, it can be easily adapted to any place and target group.</p>
OBJECTIVES (related to the heritage elements you want to disseminate)	<ul style="list-style-type: none"> • Stimulate the interest of the group of creators in heritage while equipping them with interpretation techniques. • Valorize lost, neglected or discarded heritage for the local community and visitors.
MISSION OF THE GAME / EXPERIENCE	<p>For the creators: to discover local heritage and to create together immersive and interactive experiences for their future audience.</p> <p>For the spectators: to discover local heritage by listening and getting involved in the different stories.</p>
TARGET GROUP (number of players and recommended ages)	<p>Creators: 10-25; Age: 14+</p> <p>Our initial target group were students because the learning objectives of this activity can be easily aligned with their studies. However, anyone can be a creator in this experience, so the target group can be expanded.</p> <p>Spectators: 5 groups of 5 people; Age: 14+</p> <p>Our spectators were people from the local community</p>

	<p>and tourists who happened to be in the area. Groups larger than 5 people are not recommended, as the experience should be a more personal one.</p> <p>The number of spectator groups depends on the time and energy the creators can give to their performance. The groups visit the creators/performances one after the other, not all at once, so the creators will have to repeat their performance for every group. This can take a long time and make them fatigued.</p>
HOW TO PLAY: rules	<p>Creators In preparation for their performances, creators will first participate in a selfie hunt to discover the heritage themselves. The entire process is described in the last section of this document, but these are the main rules in short:</p> <ol style="list-style-type: none"> 1. They are split in groups of 4 and they all have to take group selfies with the heritage elements on a list (same elements for everyone). 2. Each group has to upload the selfies on social media using a certain hashtag. 3. First team to upload selfies with all the elements on the list wins a prize. <p>Spectators need to make a reservation before the event. They are invited to come to a particular place at a specific time. They are told it is an active experience and will require walking around.</p> <ol style="list-style-type: none"> 1. Groups of 5 are recommended – they can organize themselves and make the reservation together, or they can make the reservation individually and will be matched with a group. 2. When they arrive, they are told they need to discover as many places as possible. 3. They are given an identification symbol so they can be recognized. 4. They have to go from one performance to the next following the clues they are provided.
MECHANICS	Discovery, orientation, teams, "treasure" hunt, time pressure
DINAMICS	Interact, explore, cooperate, compete, take photos, listen, express, create, find.
COMPONENTS AND MATERIALS	There are no predefined components.

	<p>Creators will need smart phones and an internet connection to take selfies and upload them on the internet. We chose Facebook for this and created a public group where they could upload the selfies. The group is also where we posted the list of objectives for the selfie hunt.</p> <p>Spectators are given some kind of identification symbol so creators can recognize them when they approach.</p> <p>Materials can vary according to the setting. Coloured paper, pens, strings, post-its and various other stationery, colourful clothes and textile materials, masks, etc.</p>
SPACE	<p>Open space. In our case: the historical centre of Băile Herculane</p>
TIMING	<p>It depends a lot on the group of the creators, between 45 and 90 minutes.</p>
NARRATIVE	<p>The narrative is born with the contribution of the creators and the links found by the trainers between the creators' stories and performances.</p>
SETTING THE SCENE, AESTHETICS	<p>The scene setting and the aesthetics depend exclusively on the group of creators. In some performances they decided to recreate the 19th century so they used elements which suggested that particular period. The creators have complete creative freedom.</p>
HOW CAN THE GAME/EXPERIENCE BE USED OR TRANSFERRED	<p>The experience is completely adaptable and transferable since it is site specific. It can be applied anywhere in the world.</p> <p>We used it in open spaces, with heritage that "lives" outside, but it can also be used indoors, inside a large museum, a castle, or in a combination of outdoors-indoors heritage elements.</p> <p>Spectators can be younger than 14, but this requires additional preparation of the creators so they know to prepare their content for younger audiences. It is not recommended to mix the ages, as content made specifically for children needs to follow certain rules that are very different than the rules for content made for teenagers and (young) adults.</p>

<p>DESCRIPTION OF THE CREATIVE PROCESS AND IMPLEMENTATION: difficulties, solutions, advice...</p>	<p>The process started with a training delivered to 32 students from the Faculty of Geography of the University of Bucharest – on site in Băile Herculane historic resort.</p> <p>Day 1 – Getting to know each other, getting to know the space</p> <p>a. Introduction – administrative things, general presentation of the Ludamus! project, brief presentation of the schedule; b. Selfie hunt – interactive activity meant to help students discover and interact with heritage:</p> <p>Students were split in small teams of 4 members and they were given a list of tasks they had to fulfil as soon as possible. They needed to take several selfies and then upload them on a Facebook group using a certain hashtag.</p> <p>Tasks:</p> <ol style="list-style-type: none"> 1. Take a selfie with the statue of Hercules. 2. Take a selfie with a river. 3. Take a selfie with a gazebo. 4. Take a selfie in front of a church or monastery. 5. Take 2 selfies in front of 20th century heritage buildings. 6. Take a selfie with the most representative tree of the region (Pinus nigra) 7. Ask 5 residents about the symbol of Băile Herculane. Write them down on a piece of paper and take a selfie together with the respondent. 8. Take 3 selfies with 3 important hotels in the resort. 9. Take a selfie touching a cloud and name the type of the cloud. 10. Take a selfie with a natural spring. 11. Take a group selfie at 3 pm sharp in front of the Visiting Centre of Domogled-Valea Cernei National Park. <p>c. Visit and presentation of the Visitation Centre of Domogled - Valea Cernei National Park – natural and cultural heritage of the area. Storytelling.</p> <p>d. Evening session – getting to know each other and communication games – „Send the message”, „How we perceive”, debriefing.</p>
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	<p>Day 2 – Natural heritage and communication techniques</p> <p>Hiking on trails in Cernei Mountains – looking for natural and historical heritage – stories of King Franz Joseph and Queen Elisabeth (Sissi) and their role in the development of Băile Herculane Resort. Identifying the gazebos built for Sissi in Cernei mountains. On site storytelling.</p> <p>Day 3 - Orșova - storytelling and interpretation techniques</p> <p>Context: Orșova dates back to the Roman times when it was known as Dierna and it is a small Danubian port. It has had been through tumultuous times, going from a major border fortification in the Middle Ages to a city being traded for several times between the Ottoman forces and the Austro-Hungarian empire. During the works at the Iron Gates (a major dam between Romania and Serbia (former Yugoslavia), the old centre of the town was flooded and Orșova was developed (1966–1971) on higher ground. Due to the same infrastructure development the neighbouring island Ada Kaleh disappeared under water, scattering one of the most important Turkish communities on Romanian ground. Ada Kaleh and its inhabitants, as well as the ancient city, are still present in the memory of its surviving locals being an unexploited intangible heritage.</p> <p>Activities: A. “Selfie hunt 2” – an activity dedicated to this particular area. B. A visit to Saint Anne Monastery, situated on the highest hill that surrounds Orșova, providing a panoramic view of the area, for easy recognition of landmarks specific to the region. C. Group activities. D. Evening session dedicated to interpretation and presentation techniques.</p> <p>Students had to present an element of heritage (tangible or intangible) of their</p>
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	<p>choice using techniques and styles that were drawn by chance from a set prepared by the trainers. They were also shown several improvisation techniques that they could use.</p> <p>Day 4 – Event preparation Split in teams, students had to choose a heritage element from Băile Herculane and design a type of interactive presentation (a small performance) for residents and tourists under the supervision of the trainers.</p> <p>Then the performances were linked based on coherence and spatial proximity. The end result was an immersive itinerary. Promotional materials were also needed and a strategy to attract spectators.</p> <p>DIFFICULTIES: This is an outdoor activity, so it is very weather dependent. Prepare for rain or heat waves (have in mind the creators and the spectators as well).</p>
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HERCULE



DOAR AZI

LIVE.

LUDIC EXPERIENCES BY XANDOBELA

MEIGALLO (SPELL)

Images, files and game download:

<https://ludamusproject.wordpress.com/en/activities-and-results/ludic-experiences/spell/>

NAME	<i>Meigallo (Spell)</i>
SUMMARY: what is your game / game-based experience about	<p>"Meigallo" is an online game, digital break-out style, which proposes a mystery to be elucidated by solving several puzzles and deduction tests around the Galician magical heritage and traditional medicine.</p> <p>Through a fun game, the player will have to find the magic solution to the various spells they will face, thus getting an overview of traditional figures (witches, spell casters, healers, wise men and women...), legends and popular beliefs, oral literature surrounding the spells, natural elements necessary to reverse spells, healing rites, etc.</p>
OBJECTIVES (related to the heritage elements you want to disseminate)	<p>Promote the Galician magical heritage surrounding oral literature (spells and enchantments), rituals, alternative medicinal uses of plants, linked traditional figures, and geographical enclaves associated with magical Galicia...</p> <p>Disseminate components of the traditional culture and medicine of Galicia among the younger and urban generations.</p>
MISSION OF THE GAME / EXPERIENCE	<p>Grandma Carme, on her deathbed, has left the task of solving a series of riddles and challenges to uncover her treasured legacy.</p> <p>"Meigallo" is an online game, digital break-out style, which proposes a mystery to be elucidated by solving</p>

	several puzzles and deduction tests around the Galician magical heritage and traditional medicine.
TARGET GROUP (number of players and recommended ages)	Individual online game 10+
HOW TO PLAY: rules	Explore the nooks and crannies of Grandma Carme's old room to solve the challenges and riddles she left us on her deathbed and discover her legacy. You only need a computer (preferably) or mobile device connected to the internet and paper and pencil.
MECHANICS	Deduction.
DINAMICS	Search, deduce, order.
COMPONENTS AND MATERIALS	Online platform, paper and pencil.
SPACE	-
TIMING	30 minutes (more or less)
NARRATIVE	Our grandmother Carme was a "sabedora" – a wise woman, and on her deathbed she left us a letter and a locked box that can only be opened seven years, seven months and seven days after she passed away. We are looking for someone who can help us open it and discover, at last, the inheritance she left us. But it will not be easy and her legacy has such value that only those people who prove to possess sufficient knowledge and sensitivity will be able to find the key and, therefore, be deserving of what is hidden there. Our grandmother prepared four tests on the traditional knowledge around certain spells: magical places, secret words, herbs, and diagnostic rites. With each test you pass, you receive a piece of the key that opens the lock.
SETTING THE SCENE, AESTHETICS	The transmedia language conveyed through the use of different interconnected digital platforms not only helps to keep player motivation high, but is also the result of an aesthetic decision aimed to convey the feeling of search and exploration that we wanted to achieve as part of the implicit narrative of the game: position the player in an attitude and in an emotional state of inquiry, curiosity, discovery... The graphic decisions have also been taken along that

	<p>line: to keep the settings in accordance with the theme (magical heritage, hidden and secret themes, mysteries known only by a few people...) by recreating scenarios, materials and elements that help identify the heritage elements honoured in a visual and organic way.</p> <p>To introduce the challenges, we opted for written text over audio-visual clips (it is very common that this type of games, in which mystery and solving enigmas prevail, are presented with short videos where the theme, narrative and aesthetics are introduced, as well as the corresponding mission, to hook the potential players), in order to maintain narrative coherence: since the character who proposes the challenge is an elderly person, it did not seem appropriate for her to leave the indications recorded as audio-visual clips.</p>
<p>HOW CAN THE GAME/EXPERIENCE BE USED OR TRANSFERRED</p>	<p>This experience is completely transferable to any European territory, since magical heritage and traditional medicine are present in all cultures.</p> <p>The first to do is a research work on the sub-thematics to be addressed:</p> <p>Magical places: those enclaves where traditions or legends related to traditional culture and healing rituals survive.</p> <p>Medicinal plants: study the various medicinal plants and their properties.</p> <p>Spells: oral literature linked to traditional medicine or rituals of all kinds.</p> <p>Healing rituals: ancestral rituals used in traditional medicine.</p> <p>Any other topic related to the magical heritage of a place: characters, legends, etc...</p> <p>The structure of the game can also be used and transferred to any heritage content that you'd like to dynamize. For example, it can be used to address oral heritage by locating/mapping the sources, giving the task to order the verses of a certain text, presenting the mythological characters to which it refers; or to address gastronomy by proposing to order the steps of a certain recipe, to get the necessary ingredients, to locate the origin on a map, talk about the related festive cycles, connect it to the agricultural calendar, etc.</p> <p>The basic narrative centred on someone from a past</p>

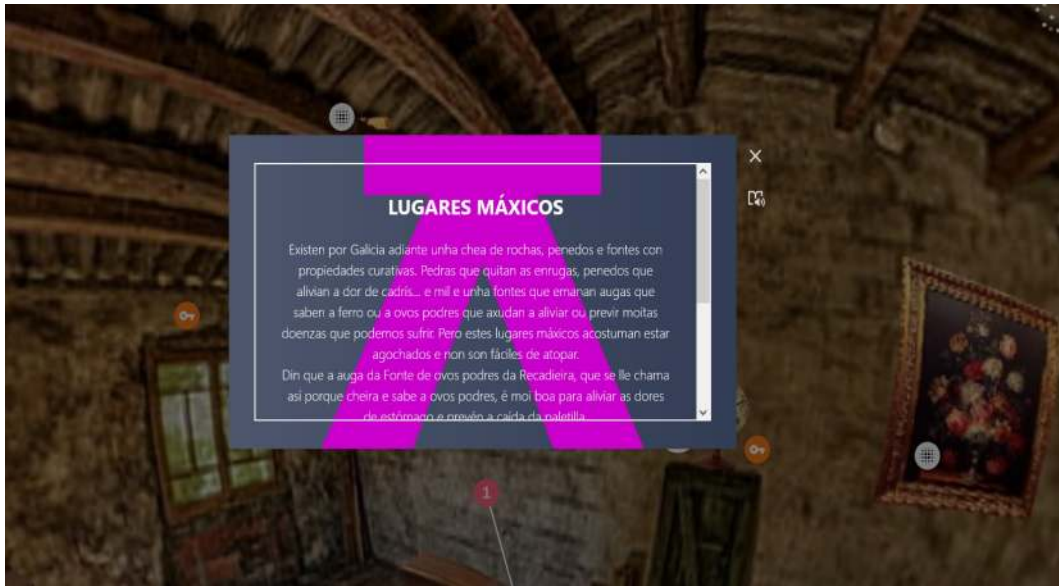
	<p>generation proposing a challenge to discover their legacy or ancestral knowledge is also a very adaptable component of the game.</p> <p>The digital tools used are free and very easy to use, so anyone can adapt them to their proposal with a minimum of time dedicated to understand their mechanisms.</p>
<p>DESCRIPTION OF THE CREATIVE PROCESS AND IMPLEMENTATION: difficulties, solutions, advice...</p>	<p>It's been a few years since we, at Xandobela, have been curating the Living Treasures Project ("Proxecto Tesouros Vivos" - https://www.proxectotesourosvivos.gal/ - a project to collect and disseminate the collective memory and cultural heritage of Galicia by taking interviews and then editing short audio-visual clips to create didactic materials for schools), as well as designing and developing game based activities for schools with the aim to disseminate the cultural heritage of Galicia. With this in mind, this initiative arises from two challenges that we had defined:</p> <p>We wanted to create new content for the Living Treasures Project, going beyond the didactic content we publish on a rather irregular basis.</p> <p>We wanted to explore new formulas to design the game based activities we have been developing for more than ten years, incorporating digital media. As a result of the pandemic and the impossibility of carrying out face-to-face activities, we saw the great potential offered by digital environments for the dissemination of content related to cultural heritage, overcoming the obstacles brought on by the epidemiologic situation. Combining both aspirations, we came up with the idea of designing a simple digital game to boost the heritage contents of some of the audio-visual creations of the Living Treasures Project. So, after rewatching the interviews made in the aforementioned project, we opted to adapt into digital medium and language a gymkhana already designed around magical heritage, which could serve as a complement to the video and as support material for work in classrooms and other educational contexts: https://www.youtube.com/watch?v=OD-xH39MHiQ. In it, Iria Pichel tells us about her grandmother, who was a keeper of knowledge related to traditional medicine and healing rituals. We chose these contents because they are very little addressed and exploited topics in today's world, and even less so in</p>

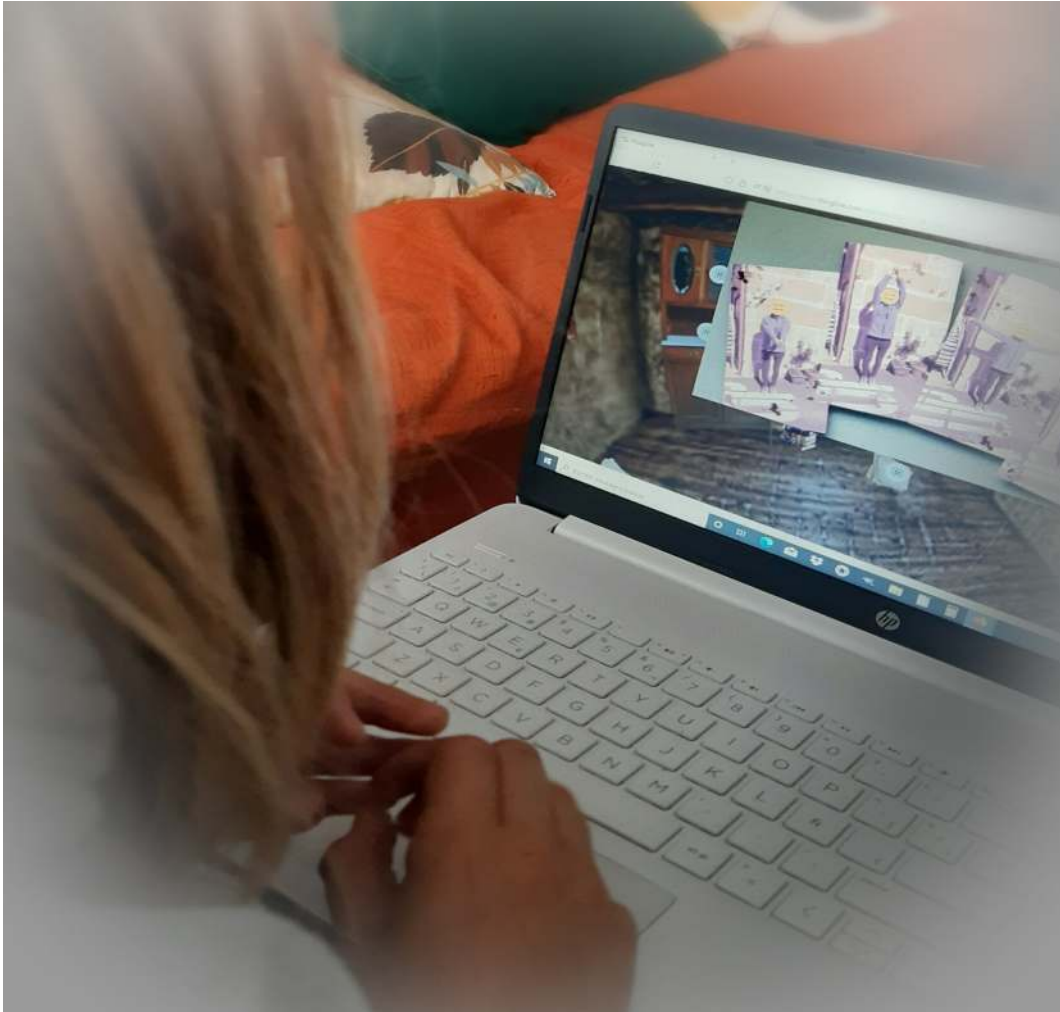
educational contexts. It should be noted that the contents refer solely and exclusively to traditional medicine as an element of intangible cultural heritage, not as a current or recommended practice for health care.

Next, we dedicated a period of several weeks to experiment with numerous apps, platforms and digital tools. Based on this research, we concluded that "Thinglink" (<https://www.thinglink.com/>) was the tool that best suited our project, because it allowed us to recreate a 360° scenario with accordant aesthetics and generate dynamics of search and inquiry. Furthermore, it also allows to add hyperlinks to other platforms in order to recreate new tests and challenges - a transmedia factor that we believe increases the attractiveness of the game and facilitates immersion in the proposed narrative.

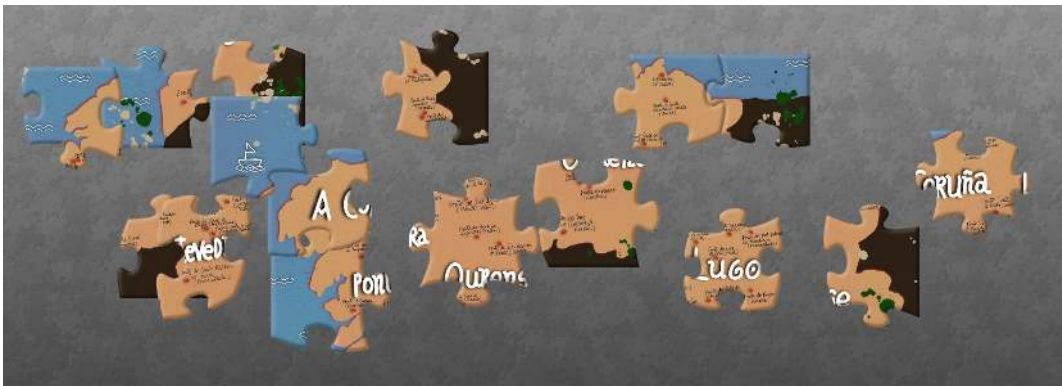
From here, what we did was adapt the activity we had previously designed in live and face-to-face format to the digital format: design the graphic elements, the texts, the scenarios, the script for the narrative, the hyperlinks, etc.

The biggest difficulty we faced was related to the base image that would make up the main setting, since we did not find an entirely valid image in any of the various 360° image banks we consulted. We tried to photograph a real kitchen of a real Galician house through the functionalities of the Google tool "Street view" (<https://play.google.com/store/apps/details?id=com.google.android.street&hl=es&gl=US>), but the results were not good. Finally, we chose to look for royalty-free images again and adapt what we found to our purposes by adding the elements necessary to be able to play. Although the result is neither technically nor artistically perfect, we prefer to be coherent, respect reality and guarantee the verisimilitude of the heritage element to be dynamized (an old room), to the detriment, in this case, of graphic quality. In this regard, we have two recommendations: a) do an efficient image search to ensure that it is available before designing the rest of the game elements; b) familiarize yourself with the "Street view" tool to know its limitations and master its optimal handling.





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PEDRA VIVA (LIVING STONE)

Images, files and game download:

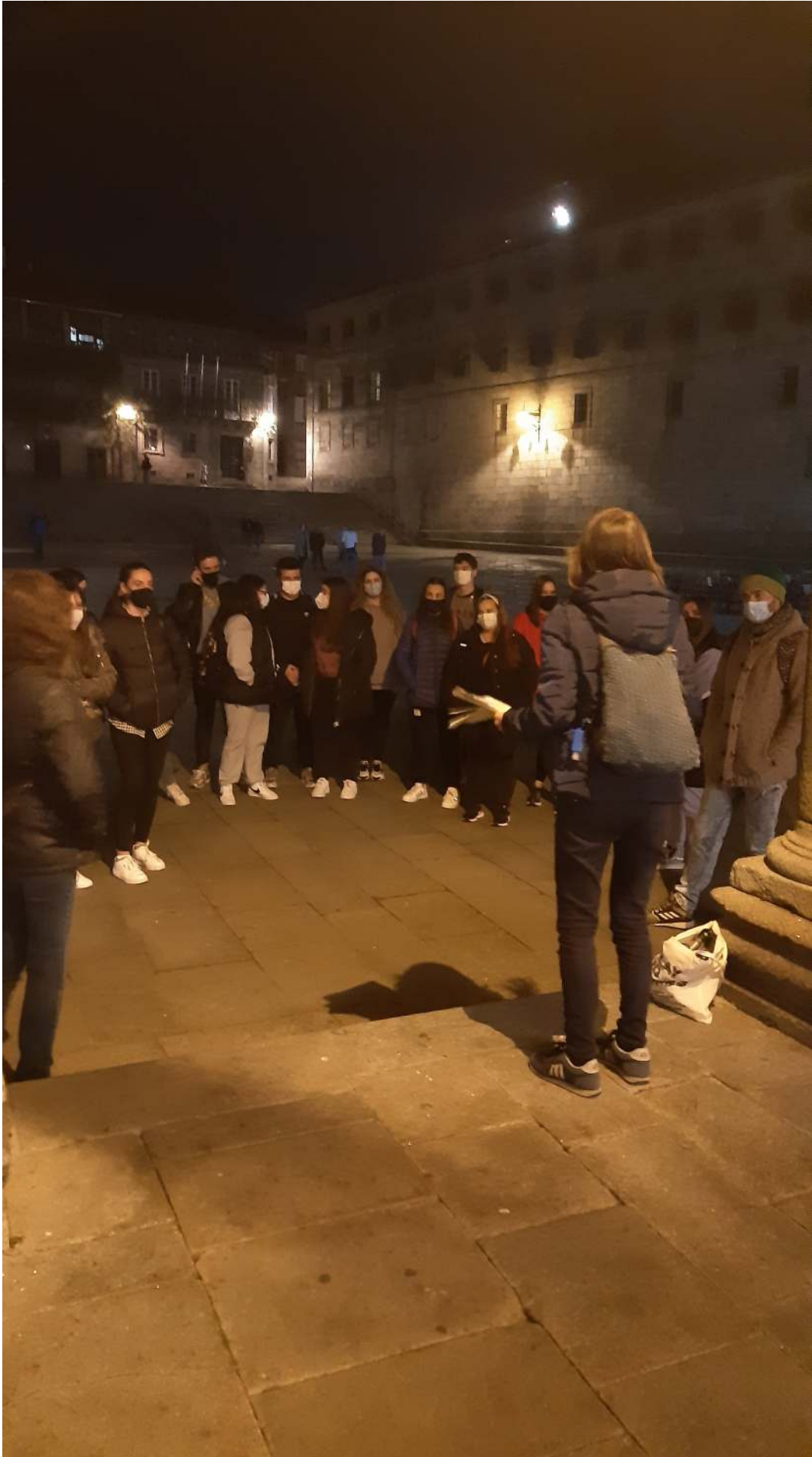
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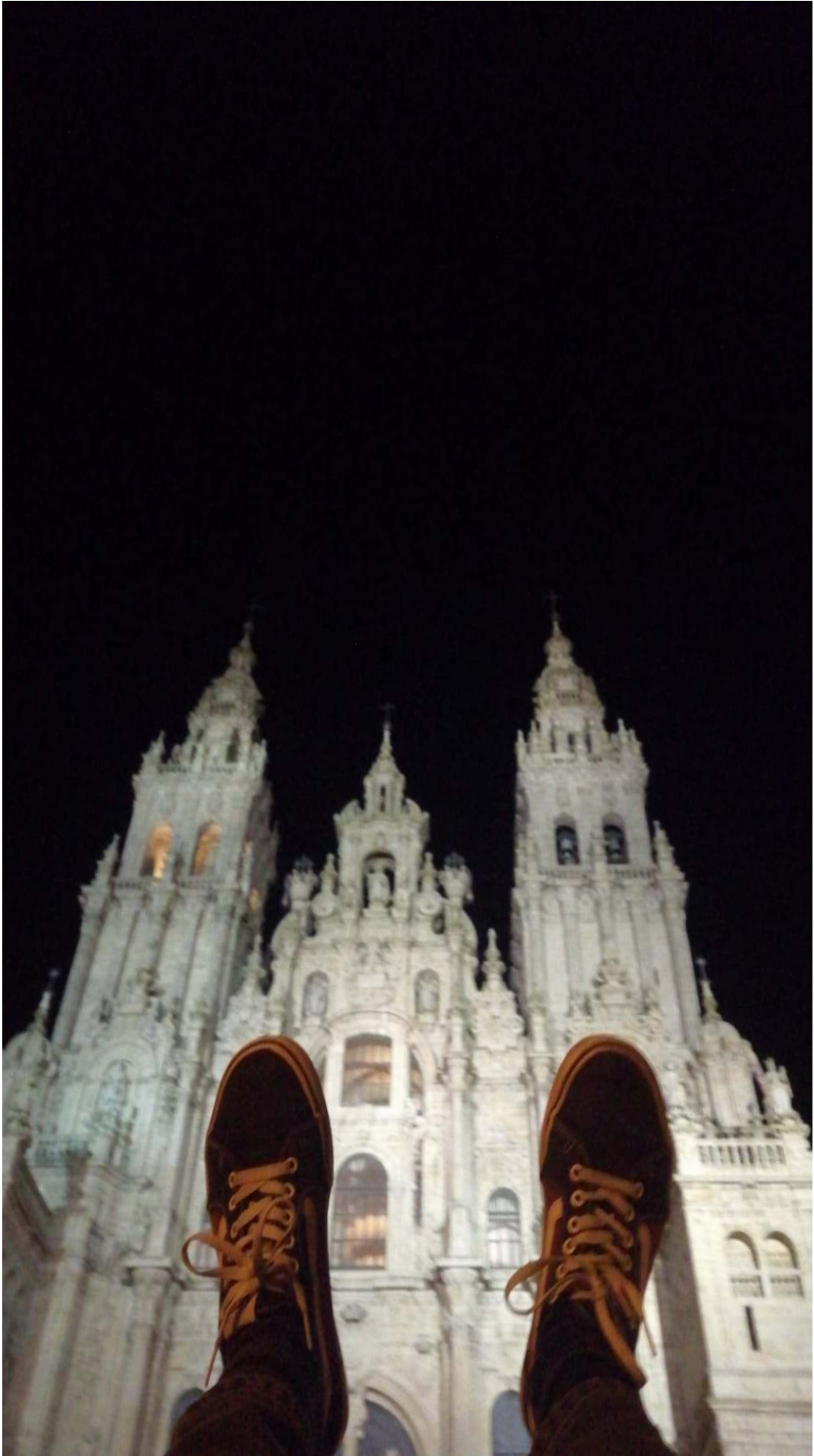
NAME	<i>Pedra viva (Living stone)</i>
SUMMARY: what is your game / game-based experience about	<p>"Pedra viva" is a group game aimed to discover the city of Santiago de Compostela with the format of a photo gymkhana (photo hunt).</p> <p>It was organised on Thursday, October 21, under the framework of the "Noites alternas" ("Alternative nights") program for nightlife for young people of the Department of Youth of the Santiago Council, organized by Asociación Cultural e Xuvenil Itaca. A total of 28 people attended, most of them students of the higher cycle of the Sociocultural and Tourist Animation studies of IES Rosalía de Castro.</p>
OBJECTIVES (related to the heritage elements you want to disseminate)	Promote aspects and interesting facts about the history and monuments of Santiago de Compostela - historic city and World Heritage Site.
MISSION OF THE GAME / EXPERIENCE	<p>You get to Compostela on foot and you get to know it by walking around. This historic stone city hides great treasures, peculiar corners and small curiosities, which only the most experienced travellers are able to discover. Will you be able to do it?</p> <p>The mission of the game is to manage to visit the largest number of places of interest, proving this through photographs or by answering a question, all without being photographed by the opposing teams.</p>
TARGET GROUP (number of players and recommended ages)	For groups of +12 people and +14 years of age. Our recommendation is that you organize at least four teams of three people each, although the more teams there are, the more fun it is and there's a greater possibility of interaction.
HOW TO PLAY: rules	<ol style="list-style-type: none"> 1. Organize yourselves in groups of 3-5 people. Each group should have people of different heights, hair colour, etc., and a fully charged smartphone with an instant messaging app installed. Choose a name for your group and an identity cheer. 2. Next, you have a list of places that you will have to find and bring proof that you did so, either through photographs or videos, or by answering a question.

	<p>You have ___ hours/minutes to try. Use the map we gave you and remember that to discover a city there is nothing better than talking to the people. You will have to send the answers to the phone number _____ vía _____ (Whatsapp, Telegram, etc.) at the very moment you have them.</p> <p>3. At ___ o'clock you will have to be at _____. For each proof you show you will be awarded 1 point and the group that gets the most points will be the winner. But, beware: you will lose 1 point for every 5 minutes that you are late in arriving at the agreed finish point.</p> <p>4. But that's not all! You should pay attention to the paparazzi. Be careful not to be secretly photographed by other groups, because if another team presents a photo of you, 1 point will be subtracted from you and added to the group that photographed you. However, these points can be returned to you if you present a particularly original, nice or artistic photo.</p>
MECHANICS	Ranking, time management, orientation and search, hunt.
DINAMICS	Orientation, photography, hunt.
COMPONENTS AND MATERIALS	Game sheets; mobile phones; internet; maps (optional); some kind of material to identify groups, such as flags or coloured fabrics (optional).
SPACE	Historic Center and Alameda Park of Santiago de Compostela. https://www.santiagoturismo.com/publicacions/plano-de-santiago-de-compostela
TIMING	Between 90 minutes and 2 and a half hours.
NARRATIVE	It does not have a specific narrative, although depending on the group, it can be presented as a general challenge to show which group knows the territory the most, appealing to the epic spirit of the players.
SETTING THE SCENE, AESTHETICS	It does not have specific setting or aesthetics, although it is recommended to be very enthusiastic when presenting the game and announcing the results.
HOW CAN THE GAME/EXPERIENCE BE USED OR TRANSFERRED	This experience is completely transferable to any place of historical, cultural, tourist, monumental, or artistic interest. All you have to do is create the questions in accordance to the place. We recommend between 15 and 30 points of interest. 1. Research the history of the place.

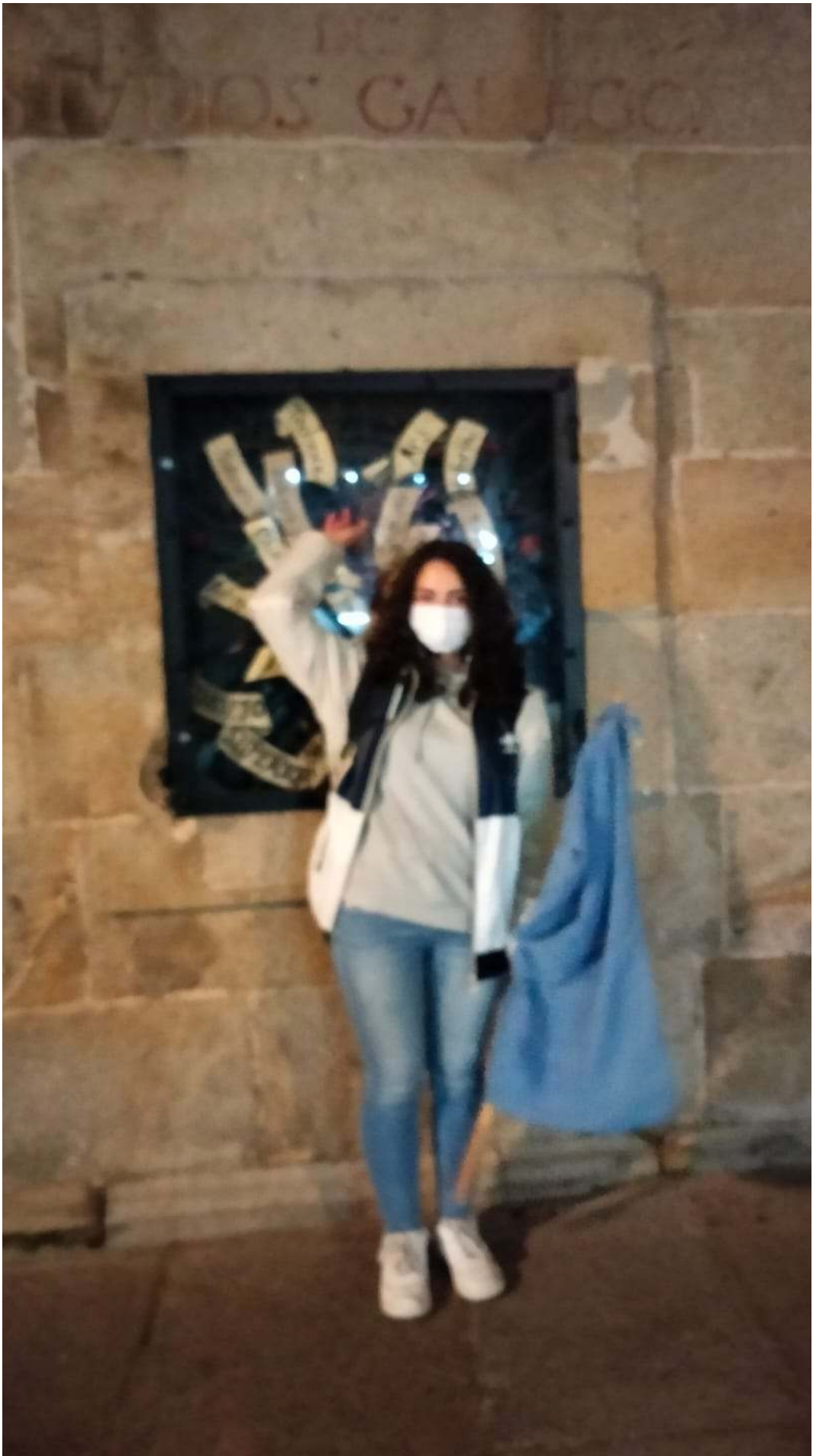
	<ol style="list-style-type: none"> 2. Select between 15 and 30 points of interest that are not too far away from each other (at most 1 km²). 3. Write the information on each of these points of interest in a succinct but rigorous way and make it accessible to any audience. 4. Edit the game material and print as many copies as there are participating groups. 5. Get maps of the place (optional). 6. Think about what categories you want to set for the final mentions (optional): most original photo, funniest photo, most artistic photo, paparazzi team (the group that took the most photos of opposing teams), etc. 7. Think about how you are going to announce the results. 8. Decide if the participants are going to get any prize or recognition. <p>It is perfect for students, tourist trips, as a teambuilding activity, leisure activity, etc. When announcing the results, you can organize some type of event / gala, distribute honours, diplomas or whatever you deem appropriate.</p>
<p>DESCRIPTION OF THE CREATIVE PROCESS AND IMPLEMENTATION: difficulties, solutions, advice...</p>	<ol style="list-style-type: none"> 1. We created a template to note the points obtained by each group as we receive the photographs via instant messaging. 2. We created several categories so that all the groups can receive some kind of recognition: the most original photo, the funniest photo, the most artistic, the best illuminated, the paparazzi team, the team that best allows itself to be photographed. 3. We had everything ready and organized to present the selected images by category using a tablet at the end of the game, but we decided to announce only the winning team and prepare a graphic presentation with the rest of the categories to be sent by email. 4. We recommend that the reception of the photographs be managed through two screens in parallel: a mobile phone and the web version on another device, and that the score is immediately recorded, as well as other observations that may be necessary to settle the rest of the categories. We also recommend that two people do the count in a coordinated manner, to be more efficient and more reliable. 5. In our case, due to organising the game at night, we found it necessary to have some element that would help identify the groups at a glance. We chose to create some flags from large fabrics in very striking colours. 6. At the end, we gave each player a small reward as a token of appreciation for their participation.















UNHA ALDEA (A VILLAGE)

Board game about the Galician rural cultural heritage

Images, files and game download:

<https://ludamusproject.wordpress.com/en/activities-and-results/ludic-experiences/a-village/>

NAME	<i>Unha aldea (A village)</i>
SUMMARY: what is your game / game-based experience about	<p>First half of the twentieth century. We welcome you to a Galician village. Life is hard and resources are rich and abundant, but limited. With your own hands you will have to build a prosperous village in order to maintain your home and use the resources nature gives you in the most efficient and sustainable way possible. You will have to make your family and your territory prosper by managing the resources represented in the cards as best you can.</p> <p>We start from an empty board that we will have to fill with cards that represent architectural and agricultural elements. Starting from natural resources, your village will grow little by little and your way of life will gain in prosperity and comfort in a sustainable and respectful way towards the environment.</p>
OBJECTIVES (related to the heritage elements you want to disseminate)	Promote the cultural heritage of rural Galicia connected to the use of natural resources for human life, the creation of traditional architecture for agricultural, livestock and spiritual uses, as a sign of adapting to the environment and developing culture. Valorise the traditional rural life of Galicia among the younger and urban generations.
MISSION OF THE GAME / EXPERIENCE	It is about building a village and making it prosper by using the available resources in the most sustainable and profitable way possible to live a comfortable, full and prosperous life in the Galician countryside: natural resources, traditional architecture, land use, agricultural and livestock development...
TARGET GROUP (number of players and recommended ages)	Between 2 and 6 players/teams. 6+

HOW TO PLAY: rules	<ol style="list-style-type: none"> 1. Start with the youngest player. 2. Each turn is divided in two phases. In the first one, choose between: a) taking a card from the central deck or from the discard pile; (b) exchange cards with another player; c) steal a card from another player. 3. In the second phase of the turn choose between: a) discard a card from your hand; b) build by placing a card on the board or two cards in case someone stole from you the previous turn. Place the card in one of the slots on the board or on top of another card that is already there, respecting the sequence drawn at the bottom of each card. Pay attention! There are cards that can only be placed on the board if certain cards from other sequences are available and some cards score more in interaction with others. 4. The game ends when all available cards are finished and the winner is the person with the highest score resulting from adding the points of the cards visible on the board.
MECHANICS	Deck-building, set collection, Take that!
DINAMICS	Observe, steal, manage.
COMPONENTS AND MATERIALS	A board per person; 98 cards.
SPACE	-
TIMING	Games of approximately 20 minutes.
NARRATIVE	We are in inland Galicia in the first half of the twentieth century, an eminently rural society and culture, with subsistence agriculture and livestock production. Extended families would organize around their home and daily tasks, in harmony with nature and the environment.
SETTING THE SCENE, AESTHETICS	Both the illustrations on the cards, which represent the available resources and their evolution, and the board, which corresponds perfectly to the plan or aerial photo of any part of rural inland Galicia, aim to respect reality in order to take advantage of the didactic potential of the game and so that the players can easily identify the recreated elements.

	<p>The card design allows players to see with a simple glance the sequence that must be followed when building the different elements of the village, the interactions with other cards, and the point system: in the centre, there's a drawing of the corresponding element accompanied by its name; at the bottom, there's the construction sequence; at the top, there are the possible interactions with other cards, requirements or consequences, and also how many points it has.</p>
<p>HOW CAN THE GAME/EXPERIENCE BE USED OR TRANSFERRED</p>	<p>This experience is completely transferable to any European territory: you would only have to select the components of your respective rural culture, sequence them based on the logic of production, and decide how they will interact with each other (for example, if you want to include cheese making, you would have to have a house, a barn, cattle, and milk; you could make the cattle interact with the fields so that they have enough food, etc.). The final scoring system could also be adapted if deemed appropriate or even the number of units for each card. Keep in mind that the more advanced the resource represented by a card, the fewer units there should be, and vice versa.</p> <p>Once these heritage elements have been selected and sequenced, the only thing left to do is design the cards and the board: it could be an easier option to use royalty-free photographs instead of illustrations.</p>
<p>DESCRIPTION OF THE CREATIVE PROCESS AND IMPLEMENTATION: difficulties, solutions, advice...</p>	<p>The creative process began with a brainstorming after analysing what heritage based games existed in Galicia. We immediately discarded the original idea of designing a game about the Camino de Santiago because we discovered that, among the few game options in general and heritage based games in particular, most were based on this element.</p> <p>We started with several base ideas: We wanted it to be a game for all types of audiences, regardless of its link with Galician culture or with the world of board games: consequently, it would have to be a simple game with great playability. We wanted it to be a game that we could export to a school context and to non-formal education: hence we opted for simple components such as cards. We wanted it to be a game with zero or little linguistic dependence to ensure its transferability. This guided</p>

the search for the main theme: thanks to the brainstorming, several proposals emerged that seemed very interesting but difficult to address due to language issues, since most of them pivoted around literary and linguistic heritage and we thought that it would be complicated to adapt them to other linguistic realities.

With these three clear ideas in mind, we thought that the agricultural theme and everything related to the rural world could meet our expectations and fill a large gap in the cultural didactics related to Galician heritage, which focuses on the artistic heritage linked to the Camino de Santiago and to religion or the rich mythological universe. Furthermore, it could be easily transferable to the local reality of all European territories in order to talk about the rural character of (past and / or present) societies.

Once the decision was made, selecting the contents and designing the mechanics and components of the game was not a big problem. We saw clearly from the beginning what the mechanics and components of the game could be. The prototyping and testing process was long, exhaustive and rigorous in order to fine tune inaccuracies and fix errors related to scoring and to detail the rules with all possible instances that could appear in the game. We started with a prototype made of simple sheets of paper simulating the cards and we tested the game among the members of Xandobela. We then started to work on the illustrations and the design of the cards and the board and, with this first version of the game complete with all components, we began to organize testing sessions with various people and conditions, asking them to detail the aspects that could be improved and those that they liked the most. Little by little we balanced the inaccuracies and finalized the details, reworking the rules until we achieved the final version.

To finish the process, we also saw fit to create a cooperative version of the game, printed in large format, to transfer to schools and social centres.







