

Designing Tourism Websites for Children: Guidelines and Experimental Results

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Abstract

The children use digital devices and begin to navigate on the Web when they are 10.3 years old (on average); furthermore, in each family, their preferences and needs are relevant in the choice of tourism destinations. Nevertheless, there is a scarcity of studies on children travel and of websites, specifically designed for them, based on their own perspectives.

In this work, we discuss the importance of conceiving and creating usable and accessible websites for children, and propose guidelines relative to their design, structure, navigation, language, and the gamification. We applied these guidelines two case studies: the first one is a dedicated section of the tourism website of a Naturalistic Oasis located close to Treviso, in Italy, the second one is a website for tourism activities dedicated to families that want to visit the city of Venice, Italy. In both cases, we present experimental results.

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1. Introduction

In [1], the authors highlight a critical gap in the tourism literature: there is a scarcity of studies on children travel, and specifically, on their tourism experiences, based on their own perspectives. The study of related work also emphasises that scarcity of tourism applications conceived and customised for children, despite the fact that we are assisting to an anthropological revolution, where the children are considered digital natives and identified by the buzzword "Generation Z" (born from mid of 1990s to 2010) and "Generation Alpha" (born from 2011 to today). On average, they start using devices at a very young age, and their life revolves around the use of different digital technologies, such as smartphones, tablets or laptops.

A recent study, conducted in 2016 by the Influence Central [2], reveals interesting statistics about the use of technologies by children in North America: children start receiving their first smartphone at 10.3 years of age, and they use it mainly for texting people and parents even in the same environment, e.g., same room, same building, etc.. These tools have become a sort of their own physical extension. During trips, tablets are in 55% of the cases the preferred entertainment tools, then phones in 45% of cases.

Regarding the access to Internet, the parents tend to be more permissive than in the past: only 76% of them impose strict limits on the independent use of the connection, compared to 85% in 2012. However, nowadays 27% of the parents have become aware of programs to filter sites or platforms and know how to use them. Moreover, when children are 11.4 years old on average when they start having their own social media account, and at 12 years, 50% of them have it. In 77% of the cases children prefer Facebook and

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Instagram, but also Twitter is increasing with 49% and Snapchat, with 47%.

An interesting survey, conducted online in 2016 by the Erikson Institute, shows that in the United States even children below 6 years of age have a strong contact with technologies: parents reported that 85% of their children had a contact with television, tablets, smartphones, and computers on a daily base for up to two hours [3].

This epochal change, due to the use of digital devices by children, may impact the tourism and the way to travel, learn and visit. On the other hand, the UNTWO (World Tourism Organization) and the ENAT (European Network for Accessible Tourism) emphasise the relevant role of an inclusive Web design for tourism, and the Advocate for Children and Young People strives to maintain conformance to W3C's Web Content Accessibility Guidelines (WCAG).

On the basis of these considerations, two new challenges open up:

- For *incrementing the tourism*: creating new digital cultural and tourism material addressed also for young users might be a winning strategy when the tourism destinations are devoted to families or schools. Tourism websites should provide recreational and educational material personalised to children, and are meant both to enhance the cultural and naturalistic heritage, and also to support practical and informative material for the tourism experience. Children will not be clients of the tourism experience, they will not be part of an economic exchange, but will be direct consumers. An involved and happy child will improve the tourism experience of the whole family and parents will become satisfied clients.

Different studies show how children may influence the choice of a tourism activity [4]. A child that enjoyed the website may ask the parents to visit the described place, and in turn also a parent may find in this nice website a sign of attention to the recreational and educational needs of a child, and thus a better quality of the proposed tourism experience.

- For incrementing *educational tourism*: in this case, the target consumers could be students. Proposing interesting and well structured material online may be interesting to improve the didactical experience in class before, and after the tourism tour, and may also increment the interest of teachers, thus improving the competitiveness of the related tourism location. To this aim, the creation of digital material may become a delicate process in different phases of the tourism experience: before the tourism experience, it

starts to create curiosity and expectations; during the experience, it becomes a supporting material; and, after the experience, it could be useful to process and internalise the experience.

In both cases, the introduction of gamification could represent a key aspect in order to promote informal learning through fun and engagement; in [5], the authors underline the potentials of gamification in tourism for children and highlights the need for further research to develop adequate children-oriented gamified tourism services; in fact, currently, there are no studies, at the best of our knowledge, about children's motivation to use gamification systems in tourism contexts, but research on adults has shown that gaming can increase the people's interest in their destination.

Nevertheless, while the number of tourism packages for families with children and accessible tourism locations for children grows (see for example Pantou.org), the number of usable and accessible (U&A) tourism websites for children is still small; more relevant is the number of tourism apps developed for children, such as [6] and [7], which are designed to entertain children in an intelligent and cultural way, encouraging them to ask questions and to think.

In this paper, we present two experiences we had, i.e., the design and realisation of: 1) a section for children of the tourism website of a naturalistic oasis, called *Oasi Cervara*, close to the city of Treviso, in the North of Italy; 2) a tourism website dedicated to families and children that desire to visit the city of Venice, Italy.

The paper is organised as follows: Section 2 introduces the concepts of usability and accessibility, explores the state of art and related work regarding the realisation of a tourism website for children, and proposes general guidelines for its development. Section 3 presents in subsections 3.1 and 3.3 our two case studies, while in subsections 3.2 and 3.4 describes the respective experimental results; finally, Section 4 ends the paper with a look to future work.

2. Website usability and accessibility

Usability and accessibility are closely related and they overlap significantly; in the design of a website is effective to address them together. Following the definitions provided in [8]: usability is about designing products to be effective, efficient, and satisfying, while accessibility addresses discriminatory aspects, including people with age-related impairments. In this paper, we consider only this aspect of the accessibility. For general accessibility, guidelines we refer the reader to [9].

Table 1. Topics of interest of the children's websites.

Website / Feature	Animals	Badges	Coloring	Didactic activities	Games	Quizzes	Reading	Videos
PBS Kids				√	√	√	√	√
Sesame Street			√	√	√			√
Starfall	√			√	√		√	
CoolMath4kids		√		√	√	√		
MakeMeGenius	√			√	√	√	√	√
National Geographic Kids	√	√		√	√	√		√
Fun Brain		√		√	√		√	√
Nick Jr.			√	√	√		√	√
Disney Jr.		√	√	√	√			√
Highlights for Kids			√	√	√	√	√	√
Total	30%	40%	40%	100%	100%	50%	60%	80%

2.1. State of art

Making U&A for children a website that already owns these features for adults does not just consist in adding some colours, puppets and in eliminating or simplifying actions that adults consider difficult [10]. The same considerations apply for children of different ages, as older children show more experience than younger ones. This is the result of an interesting study that was conducted in 2010 by Jacob Nielsen using two rounds of testing: the first on 27 sites with 55 children, aged 6–11 in 2001; the second on 29 sites with 35 children, aged 3–12 years in 2010 [11].

Both studies, conducted at 9 years of distance, provide similar results with the only difference that the early exposure to computers has anticipated the abilities that children showed around 6–8 years to 3–5 years.

In [11], the author addresses different key features that have to be taken into consideration while developing sites for users aged 3–12 years. Note that, other guidelines have also been proposed for teenagers [12]. For users in the age range 3–12, the first thing is to divide them in three groups young (3–5), mid-range (6–8), and older (9–12), as following specific guidelines for each group improves the user experience. Then, it is important to keep in mind that adults and children have different needs/perceptions.

From a usability study conducted in [13], it emerges the importance of providing a simple but funny name to the site to attract the child's attention. Also the related link should be easily memorised for future visits. The initial impression is also very important as it affects the whole user experience [10]. Moreover, during navigation, the user wants to have a full control of the site in order to be gratified, thus the navigational structure should be similar on each page of the site and should be easy to follow [14]. The search for items should be simple and direct [13]. Children want instant feedback for every action they make [15]. Having technical limitations provided, e.g., by the need to install plugins or update software, or by the access to

old desktops/laptops, may negatively affect the user experience. The same holds for mistakes that should be easily recovered from, or for promotional content that typically attracts the child but at the same time distances him from the site. To be enjoyable for a child, the site should offer entertainment such as games or interactive material. Personalisation of colour choices, graphical devices and animations is also considered important [13]. The text should be easy and succinct, at an appropriate readability level for the age range, colors should be bright and with a good contrast, the background should be colourful and not white [13]. It should still be clear which elements of the site are interactive and which are not [15–17].

2.2. Related Work and Guidelines

The number of tourism websites for children is still small. Recently, the *Independent* published a list of the 50 best travel websites [18]: it appears evident that all of them directly address adults and only indirectly children. Another recent list of the 20 of the best free and fun educational websites for children [19] provides an idea of the widest topics of interest of the current portals dedicated to children. In Table 1 we list the 10 websites that apply U&A guidelines and provide us an idea of the topics, considered appealing for children.

We can note that the topics of interest may be considered general modalities for capturing the attention of the children; furthermore, these websites share general guidelines regarding the graphical layout, the navigation structure, the used language and the user model. Keeping in mind the common features of these websites, the previous observations that we mainly collected from [11], but also from [10, 13–17, 20–23], we provide a list of general guidelines for a U&A tourism website:

- The **design** and the **structure** should be simple, clear and *predictable*; the content focused on the objectives of the website. A *fun name/logo* should

grab the user attention; the URL should be a predictable one. The information should be redundant, and a graphical visual interface should contain a copious use of pictures (drawings, photographs, symbolic images), easy to understand. The text should go with pictures. It should be *clear, simple, and short*; should be in a big font (14 characters points for younger and 12 points for older children), in plain Sans-serif style (e.g., Verdana), with bright colours and a good contrast. Headings and titles should be used.

The interface should be *responsive* and *perceivable*, for enabling the use of screen readers. To avoid: background sounds, moving text, blinking images and horizontal scrolling.

- **Navigation** should be consistent, similar in every page/section, and propose a simple and *logical structure* of navigation, also using navigation *buttons* at the top and the bottom of the page, and back/forward buttons. The website should be equipped with *search engines*.
- The website should introduce the **gamification** in order to *engage the users*, providing them with contents and feedbacks which are entertaining, quick to judge (standard), clear, consistent, controllable, instantly *gratifying*; should allow *customisation* and make adaptive the interaction with users, considering their interaction history, their preferences, requests, needs, and their diversified goals; should propose the tasks decomposed in simple subtasks.

The gamification may be realised [5] as a:

- *social game*, where the game prepares the tourist to the visit or, after the visit, allow users to internalise and deepen the experience;
- *location-based mobile game*, where the gamer plays during the visit. In this case, it is necessary to use a mobile device, which will collect information from the context and at the same time will enable the user to explore the place in search for points of interest.

However, gamification becomes effective when users are mentally and emotionally motivated. Intrinsic motivation may be promoted by the relational dimension (connections with other players); competency (when players receive positive feedbacks for their actions); autonomy (when players perceive to have the control of the situation) [24]. Points, badges, ranks and leaderboards are some of the most common elements of gamified systems; they provide immediate feedbacks to players, and motivate them to continue.

- The **language** should be simple and precise, and apply the adequate linguistic registers for the *target age*, supplied as necessary with *animations and sounds*; acronyms and abbreviations, non-literal texts, and jargon should be avoided.

Furthermore, for what concerns tourism children websites we obviously point out that all the previous suggestions apply as the site should be enjoyable for children. In this context we want to emphasize the key points that we have tested also in our case studies that will be presented in Section 3:

1. providing interesting tourism material targeted for children, i.e., with a short interesting text whose reading creates curiosity and expectations;
2. addition of interactive games containing information related to the target destination.

3. Our Case Studies

In this section we describe two case studies: the first one is a website of a naturalistic oasis called *Oasi Cervara*, for which we created a section of the website, called *Oasi Kids*, designed for the direct navigation by children [23]. The second website illustrates tourism activities for families and children in the city of Venice. Both websites have been developed following the guidelines mentioned in Section 2.2, and, as we will discuss in the following sections, a particular attention has been given to activities such as games or competitions for children.

3.1. The Case Study of a Naturalistic Oasis

Oasi Cervara is situated in the Veneto Region in the North of Italy and has a special environment composed of a swamp ambient and a peat bog system, and provides habitat for different species of animals, such as migratory and non-migratory birds, amphibious and reptiles, tree frogs, swamp tortoises, grass snakes and fishes. The spontaneous vegetation and the flora make the Oasis a very precious ambient; for this reasons, it is considered by the Veneto Region as Community Interest Site and Special Protection Zone for the fauna of the Sile river.

The Oasi Cervara S.r.l. manages the park trying to combine the protection and conservation of the ambient together with visitors' enjoyment. This park is mainly visited by families (in 79% of the cases), schools (in 19% of the cases), photographers (in 2% of the cases), or elderly people. The Oasis has a certificate of Excellence on TripAdvisor; however the few negative scores indicate that there is a gap between the expectations (e.g., seeing a lot of animals), and what it is really offered (which obviously also depends on the season, the weather, etc.). Thus, improving the

quality of the offered information on the website is a challenging but important point; for this reason, we proposed and developed the *Oasi Kids* section¹ of the website. It has the aim of:

1. being inclusive, usable and accessible for children in the range 8-11 years. The site contains some descriptive parts not suitable for younger users;
2. involving children in a ludic experience;
3. enriching the online communication of the information about the Oasis;
4. improving the quality perceived by families and teachers of the offer proposed by the Oasis.

The pages of the website have been developed using Wordpress, and following the guidelines presented in previous Section 2.2, in order to be inclusive for the chosen target. In particular, regarding accessibility, the site is:

- *Responsive*: may adapt to mobile phones, to different screens and browsers.
- *Perceivable*: following the W3C guidelines the language has been specified, and there is alternative text for screen readers.
- *Distinguishable*: there is a good contrast between the colours of pages and of the text, both inside the menu (black over white), and also inside the standard pages (white over grey/black).
- *Compatible*: the choice of a standard font Arial and of the font-family sans-serif, guarantees the maximal compatibility with all the browsers that may access the site.

Regarding usability:

- *Navigation*: is simple, the user is directed to a specific page via a menu and the related sub-menu or by clicking big buttons with images and text;
- *Structure*: very simple and functional.
- *Layout and graphics*: simple, targeted to young users.
- *Home Page*: adaptable by proposing different topics to different users.
- *Text*: the length is medium/short, some words are in a different color to emphasise a concept and to create curiosity.

¹This section is temporarily offline from the official site (<http://oasicervara.it/>) for technical reasons, but part of it is available online at this link: <http://oasikids.altervista.org/oasi-kids/>.



Figure 1. The main page of Oasi Kids.

- *Syntax* of the content is simple and clear.

Regarding the design and navigation, we can observe that clickable areas contain both images and textual information; see, e.g., Figure 1 with four rectangular clickable areas, called Animali (Animals), Gufi (Owls), Parco (Park) and Giochi (Games), and Figure 2 where the round clickable areas are in a flower shape so to be more enjoyable by young users. There is also a button "Torna al Menu" (Go back to the menu) to simplify navigation. The depth of the navigation is at most 3 clicks. In Figure 2 we may notice that the text is short, and some words are in a different color recalling the concept, e.g., erba (grass) is in green, etc..

Regarding the content, the arguments have been chosen so to create curiosity, interest to visit the park (e.g., messages such as "did you know that ..."), and at the same time contain precise but simple scientific information (such as the family name of an animal, the physical characteristics, etc.). To simplify the educational experience each animal card contains a pdf version that can be downloaded for pre and post-processing. Moreover, the site proposes educational messages, as shown, e.g., in Figure 2 with the message "If you want to see the animals you should be quiet and careful ...".

Regarding the gamification, we use the so-called social game, with the double aim of preparing the visit, or deepening the knowledge acquired during the visit; for this reason, in order to improve the navigational and educational experience of the children, the Oasi Kids site proposes two games that can be reached from the main page by clicking on "Giochi" (Games). To avoid that young users get impatient during the game loading (which takes a couple of seconds), they are entertained by an animation of an owl that opens and closes its eyes.

The first game is a standard memory game with cards that depict different birds and also indicate the corresponding name (see Figure 3). This games aims

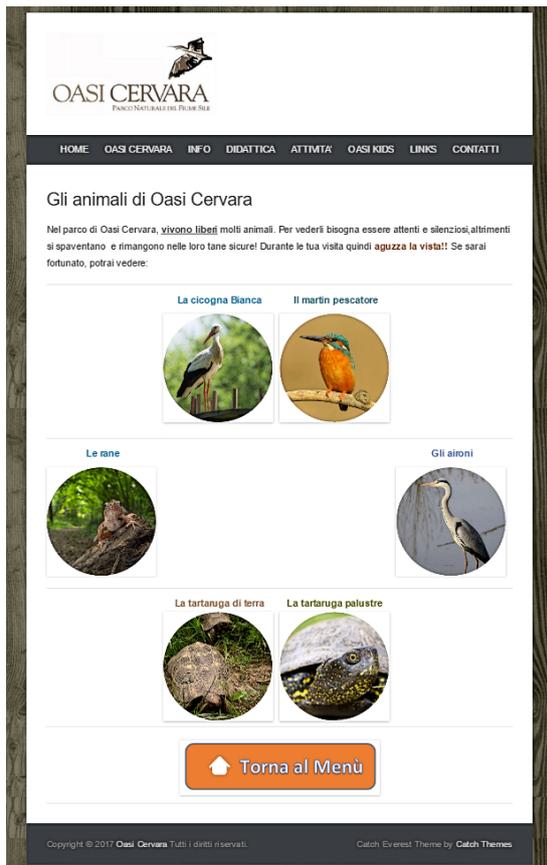


Figure 2. A page with animals.

at improving the retention of an animal aspect and name. The second is a matching game. The child has to match a description of an animal (on the left side of Figure 4), with the name of the animal (on the right side of Figure 4). Obviously, the questions are related to information that is described inside the website. This game aims at improving the retention of habits and characteristics of different animals that live in the Oasis. In both games, the players receive positive feedbacks in order to improve their motivation and enforce the learning process.

Finally, the language is informal, simple and clear, the description of the animals is in first person. In some parts the text has been written using nursery rhymes, to make the content more enjoyable, musical and memorable, and also to increase the curiosity of the child for the real visit to the park.

3.2. Experimental results

In this section we describe the *methodology* we have used and we then illustrate our experimental results on the Oasi Kids site. We have developed the website following different steps:



Figure 3. A memory game with animals.



Figure 4. A question game.

- **Literature survey:** In the first phase, we have collected all the information about usable and accessible websites for young users, and we have defined some features the site should include (e.g., many pictures, games, etc.).
- **Interviews:** In the second phase, in order to decide how to structure the site and which contents to include, we have conducted two different interviews inside a primary school. The first one with a group of 42 parents of children of the school, the second one with 30 teachers of the school, to check their possible interest for having a website dedicated to children on a tourism educational destination.

Interviews to parents. The three questions were:

1. The use of technology by children: 90,5% of the children use by their own technology for games/school research.
2. The search of information for a tourism destination, and the involvement of a child in the search: 100% of the parents search tourism information on the Web, 55,33%

Table 2. Results of the assessment questionnaire proposed to 50 parents.

QUESTIONS	Average grade
Do you like the Oasi Kids site?	5.6/7
Do you like the site content?	5.62/7
Do you like the site information?	5.54/7
Do you like the site colours and characters?	5.4/7
Was the quality of the tourism destination increased by the website?	4.9/7

completely involve their children in the decision, 36,6% involve them partially.

3. The importance of the development of the Oasi Kids website: The average score was 6 out of 7.

The parents were also asked about the material they would expect to find in the site, and the major requests were videos and photos (in 84,2% of the cases), information about the park (in 76,3%) and about the flora and fauna (in 71,7%). Finally, in 81,6% of the cases the parents claimed that while choosing between two tourism attractions having the same price, they would pick the one with a website section dedicated to children.

Interviews to teachers. The four questions were:

1. The use of technology by children outside school and at school: Children use technology outside school for games, school research, videos, communication with parents; at school for guided searches on the Web, didactic activities inside educational websites, watching videos dedicated to linguistic and musical activities.
2. The set of activities proposed to children before a tourism didactic experience: Typically teachers try to prepare children to the experience by anticipating them the content of the visit with didactic presentations (37% of the cases), laboratories (25%), etc., and the way they should behave. This, in their opinion, increases the quality of the educational experience.
3. The best pre-visit information tool: Technological tools with videos (24 out of 30 teachers), information material (27 out of 30), games (20 out of 30), etc. So all the teachers claimed they would use a site with such a content to prepare children to the visit, and 2 teachers out of 30 stated they would also use it as a post-processing tool after the visit, to let the students internalise and deepen the contents.

4. The importance of the development of the Oasi Kids website: 93% of the teachers claimed it would improve the quality of the didactic experience.

To conclude, for both interviews emerges the great importance of developing a dedicated website containing videos, photos, didactic material, and games.

- **Website development:** The third phase was the development of the website applying the usability and accessibility guidelines discussed in Section 2.2, and the hints and suggestions collected in the literary survey and interview phases.
- **Assessment questionnaire:** In order to evaluate the perceived impression of the Web site, in the last phase we collected through an assessment questionnaire the opinions from a set of 50 parents and separately from a set of 50 children of an age between 8 and 11 years.

The questionnaires for the parents had scores that ranged from 1 to 7, for children we have used a different scale composed of 4 different emoticons (representing the perception of: very good, good, so and so, do not like).

The main results of the questionnaire proposed to the parents are summarised in Table 2, more details may be found in [23].

Regarding the questionnaire proposed to the children, the results are summarised in Table 3: The children liked the site in general, liked colours and images, the descriptions and they all would be excited to visit the Oasis.

To conclude, the parents and the children have in general appreciated the website Oasi Kids and, although some time is needed to collect a real feedback, in our opinion this could be a good starting point for the increment of visits to the Oasi Cervara park.

3.3. The Case Study of a Website for Venice

In this section we describe our second case study, i.e., a website/blog called *My little Venice* dedicated to families with children that want to visit the city

Table 3. Results of the assessment questionnaire proposed to 50 children.

QUESTIONS	😊	🙂	😐	😞
Do you like the Oasi Kids site?	20	23	7	-
Do you like colors and images?	23	22	3	2
Was it easy to find the material you searched for?	14	26	10	-
Were the topic descriptions interesting?	22	20	6	2
Do you feel like visiting the Oasis now?	20	25	5	-



Figure 5. Part of the main page of My little Venice.

of Venice, Italy. The site contains a list of activities, laboratories and tour proposals for children in Venice. It is a traditional website with some articles that can be commented by the users (i.e., children in our case), thus allowing an interaction typical of blogs. The site is online²; it is organized in different sections as indicated in the menu of the homepage (see Figure 5).

Section “Chi sono” (Who am I) contains information about the developer (Eleonora De Riu). Section “Articoli” (Articles) is dedicated to general information on Venice: It consists of a list of blogs containing curiosities about Venetian language terms, monuments, etc.. Section “Itinerari” (Itineraries) describes attractions and museums suitable for children, activities, laboratories, and excursions. Section “Eventi” (Events) contains a list of events dedicated to children, “Partecipa” (Participate) the page of a design competition dedicated to children (we will further discuss this later in this section), and finally section “Contatti” (Contacts) contains information about the developer and to contact different museums and attractions.

This site has been developed using the cloud-based Web development platform Wix (<https://it.wix.com/>), following the guidelines presented in previous Section 2.2, in order to be inclusive for the chosen

²The website, presently not updated, is available online at this link: <http://mylittlevenice.wixsite.com/mylittlevenice>

target of children and families.

Regarding accessibility, the site is:

- *Responsive*: may adapt to mobile phones, to different screens and browsers.
- *Distinguishable*: there is a good contrast between the colours of pages and of the text, both inside the menu (black over white when the menu item is selected, dark blue over light blue when it is not selected), and also inside the standard pages (black over white/pink).
- *Compatible*: the choice of a standard font Arial, Helvetica, and of the font-familyt sans-serif, guarantees the maximal compatibility with all the browsers that may access the site.

Regarding usability:

- *Navigation*: is simple, the user is directed to a specific page via a menu and the related sub-menu or by clicking big buttons with images and text. Some buttons are auto-explicative, they indicate, e.g., “Leggi” (Read more), or “Scopri di più” (Learn more), etc.. There are also links between events and Google maps, to improve the quality of the tour description.
- *Structure*: very simple and functional.
- *Layout and graphics*: simple, intuitive, targeted to young users; Images are used to improve the quality of the graphics.
- *Text*: the length is medium/short, words are very simple, images have been added to clarify concepts.
- *Syntax* of the content is simple and clear.

Navigation is very simple, each page contains a menu on the top, with different clickable and colored buttons that lead to the different sections (see Figure 5 on the top). Moreover, text is short (at most 200 words versus standard texts of 300-700 words) and simple, and is often supported by images which can either be pictures (see Figure 6) or stylised images (as the picture of Figure 5).



Figure 6. An article.

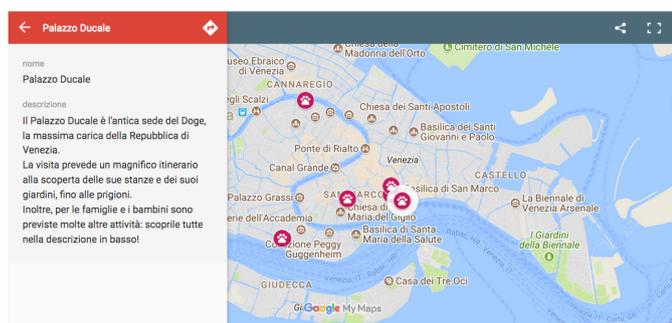


Figure 7. The map of Venice.



Figure 8. A drawing competition.

Finally, regarding the gamification, in order to improve the navigational and educational experience and the participation of the children, My little Venice proposes:

1. An interactive map, shown in Figure 7, that children might explore to locate different events. By clicking different dogs' footprints on the map, they obtain detailed information about the location/event (see the map in Figure 7 with a description of "Palazzo Ducale").
2. A drawing competition, shown in Figure 8: each child has to propose a drawing related to the tourism experience in Venice, e.g., a visited location, a laboratory, etc.. Each week a winner is selected and the related drawing is posted in the webpage called "Partecipa" of the website (see Figure 8). The drawings can be submitted using the Instagram page ([_myvenice_](#)), or might be sent by e-mail. This game promotes the relational dimension, offering to the participants the opportunity of keeping on looking at the website; posting the winner drawing provides a positive feedback to the winner, which is recognized as competent; other children will be stimulated to participate to the competition, and their parents will consequently visit the website.

Finally, at the bottom of each page there is a link to the Instagram page and/or to the Facebook page that shares the articles of the blog.

3.4. Experimental results

First of all we monitored the website for its first three months in order to: 1) detect where users were connecting from, in which time of the day, etc.; 2) provide an assessment questionnaire to detect how satisfied users were about the website.

Connection statistics. We have used the statistics provided by Wix and what emerges is the following:

- The highest number of social network accesses to the page of My Little Venice comes from Facebook (66%), then from Instagram (34%). In the first three months the Facebook page was followed by 73 users, and the highest number of visits was registered around 9 pm.
- Regarding the geographical origin, evaluated through the Visitor Analytics app, we have registered in the first three months 290 users, 260 connecting from Italy and the remaining from different countries (see Figure 9). There were 730 site visualizations, an average stay of 2 minutes and



Figure 9. The visitors' map.

51 seconds and an upper bound of 3 minutes and 17 seconds. The longest visited page is the one called "Attività, Laboratori e Feste" (Activities) for 2 minutes and 31 seconds in average, and then the "Partecipa" (Participate), the one related to the drawing competition (1 minute and 48 seconds), proving it generates interest in the website.

Assessment questionnaire. Inside the section "Partecipa" (Participate), we have inserted a questionnaire to evaluate the users' satisfaction about the website. We have collected 106 questionnaires from parents in the first three months of activity of the website.

The questionnaires had options such as "Yes", "No", "A lot" or "Maybe". The results of the questionnaire proposed are summarised in Table 4: all users found that the site was very useful; most of the users (100/106) did not know there were activities for kids in Venice; very few new it but did not have any information about them. Most of the kids enjoyed the laboratories they participated to (some parents did not answer), and all users claimed they will visit this site again.

Finally, we have asked how the users found out about the site, 5 (5.7%) answered from a link on the Web, 40 (30.7%) from a social network, 60 (56.6%) from other people.

To conclude, the parents and the children have in general appreciated the website My Little Venice. Parents found very useful the information contained in the website, whereas kids really enjoyed the drawing competition.

4. Conclusion and Future Challenges

In this paper, we analysed how tourism websites should be developed to be usable and accessible by children. We have shown how a child that enjoys the navigation on a site may influence the choice of a particular tourism destination by the whole family or

by a school for didactic purposes. We have illustrated two experimental U&A children tourism websites that we have developed following the proposed usability and accessibility guidelines; finally we have discussed in details the results of the assessment questionnaires proposed to parents and/or to children: they show how the websites were well appreciated by both groups.

As a future work we are planning to do a more extensive analysis by considering features such as users (children) experience, improved experience, increased number of visits or longer sessions. We also plan to propose a set of templates and widgets conceived specifically for tourism websites. Moreover, we would like to implement a mobile application of these websites in order to introduce new immersive gamification mechanisms.

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Table 4. Results of the assessment questionnaire proposed to 106 users. The notation – means the related answer was absent.

QUESTIONS	YES	NO	A LOT	MAYBE
Was this site useful?	0	0	106	-
Did you know there were many activities for kids in Venice?	0	100	-	6
Did your kids enjoy the lab they participated to?	78	0	-	-
Will you use this site again to get information?	106	0	-	-

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