

## Article

# Prospective Study on Geosciences On-Line Education: UNESCO Global Geoparks in Spain and Portugal

Jesús Enrique Martínez-Martín <sup>1,\*</sup>, Pilar Ester Mariñoso <sup>1</sup>, Emmaline M. Rosado-González <sup>2</sup> and Artur A. Sá <sup>2</sup>

<sup>1</sup> Facultad de Educación, Universidad Camilo José Cela, 28692 Villanueva de la Cañada, Spain

<sup>2</sup> UNESCO Chair on Geoparks, Sustainable Regional Development and Healthy Lifestyles, and Pole of the Geoscience Centre (CGeo), Department of Geology, University of Trás-os-Montes e Alto Douro, 5001-801 Vila Real, Portugal

\* Correspondence: jemartinez@ucjc.edu

**Abstract:** UNESCO Global Geoparks (UGGps) stand out as territories of excellence for the development of educational activities in the international arena. Their didactic potential, their multidisciplinary and their importance for the development of non-formal and informal teaching activities have drawn the attention of institutions, organizations and governments of many countries. This, to such an extent, that the number of UGGps continues to increase year after year, having currently reached 177 territories spread over 46 countries. All of them work every day developing different activities and educational proposals aimed at the creation of the so-called “Quality Education”, the fourth objective of the SDGs of the 2030 Agenda. The diversity of didactic plans, their adaptability and their accessibility mean that each UGGp is unique and different from the rest, maintaining the key values that make up this group of territories. This study describes the different educational proposals and activities that the Spanish and Portuguese UGGps show on their official websites, with the aim of analyzing their level of visibility before visiting the territories and highlighting their relevance in the education development framework.

**Keywords:** education; geosciences; geoparks; sustainability; online



**Citation:** Martínez-Martín, J.E.; Ester Mariñoso, P.; Rosado-González, E.M.; Sá, A.A. Prospective Study on Geosciences On-Line Education: UNESCO Global Geoparks in Spain and Portugal. *Geosciences* **2023**, *13*, 22. <https://doi.org/10.3390/geosciences13020022>

Academic Editors: Jesus Martinez-Frias and Assimina Antonarakou

Received: 1 December 2022

Revised: 30 December 2022

Accepted: 11 January 2023

Published: 19 January 2023



**Copyright:** © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

## 1. Introduction

Current educational models are in a state of constant evolution and adaptation. The events that have occurred in the last decade and the progress of information and communication technologies have forced experts to reassess the system and transform traditional elements into new hybrid tools, which maintain classic values and implement new educational methodologies. Each step that the educational system takes translates into a renovation that affects the teaching team, the centers, the students, the infrastructures and even the methods and the proper concept of “education” itself, making it behave almost like a living being that adapts to the moment depending on the need. In this context, the UNESCO Global Geoparks (UGGps) stand out, with an educational plan based on geotourism and directly related to sustainable development [1–3]. There is no doubt that, within these territories, there is a different and effective educational model that combines informal and non-formal methods to offer an accessible and adapted education for all which helps us understand our Planet [4,5]. The perfect union between science and society exists within the UGGps and it is necessary to live the experience to understand why it is so important for the social moment in which we find ourselves [6]. The variety of activities that are carried out based on sustainable education, such as the ‘European Week of Geoparks’ [7] or the ‘Geoconvivencia’ event [8], among many others, enjoy international relevance and have demonstrated, on many occasions, their educational value aimed at all kinds of public [1]. Even so, it is true that these activities have a lack of visibility within the scientific community, if we base our evaluation on existing publications in high-impact journals. Most of the educational projects are accessible if we review the number of abstracts

that appear in international meetings, but this is outside the most important databases and, therefore, hidden behind the large number of publications that relate the UGGps to other subjects.

It is evident that the recent situation caused by the COVID-19 pandemic has led to a paradigm shift and an almost immediate update of the educational program in order to continue developing it continuously [9] and, for this reason, territories such as the UGGps are so important and even examples of good practices [10]. Their model and everything they encompass make them safe places to complement education in geosciences and learn about society, the environment and natural-heritage protection [11].

Nowadays, the terms “visibility”, “online branding” or “personal brand” are very important elements for the development of projects on the web, since they offer a natural appeal that draws the attention of the public and generates sensations such as trust or confidence in the existence of a minimum of quality [12]. Parallel to these issues, web design, information, documents or audiovisuals contained therein can be a window through which people can obtain an idea of the content they can find within a UGGps in the fastest and most effective way possible. It is important to highlight this in the study, since it represents a fundamental role in how social networks and the Internet in general work and, in turn, how society reacts to content and interacts with it [13].

This study tries to collect and analyze the amount of educational information that is shown on the web pages of the Spanish and Portuguese UGGps themselves. The idea is to ask ourselves what the approach is that teachers, coordinators and curious people follow when it comes to finding out about the educational activities that are organized and carried out in these territories. Can I visit the UGGps with my students? Are educational programs able to complement formal educational programs taught at school? Can you help me with the guides on the routes? Do you have activities for students of all levels? All these questions are reflected in a series of variables that have been quantified to obtain visual results of the situation of education, in all its variants, on the UGGps web pages. By collecting information and segmenting it into variables, we can observe the current framework and the situation in which the UGGps find themselves in relation to education. Based on the data obtained, the possibilities and opportunities offered by the advancement of new technologies, the updating of educational systems and their implementation in these territories for sustainable development and their proper functioning are discussed.

The presence of education on the UGGps websites is a key factor promoting all the activities that these territories organize throughout the year and demonstrating their effectiveness as sustainable and safe educational alternatives, aimed at heritage protection, the learning of Earth Sciences and the search for a more aware and, ultimately, more sustainable society [14]. The good educational practices that take place in the UGGps and the integration of the SDGs within environmental education directly related to these territories have been reflected in numerous educational models, books and scientific publications [15–18]. Considering that, currently, online learning is at the center of our lives as one of the most important sources of information for our cognitive development, it is important to know the educational proposal that places such as the UGGps offer through this particular information media. For this reason, their study can shed some light on the adaptability of these territories to the digital world and their usefulness as an alternative method of education, not only in the field, but also online.

## 2. Objectives

With this research, we intend to achieve, as a main objective, the framing of the presence and visibility of the concept “education” and its methodologies in the Spanish and Portuguese UGGps web pages, from which three specific objectives arise:

- Promote the UGGps as essential and safe territories for the current educational model.
- Enhance the visibility and presence of the educational potential of these territories within the educative and scientific community.
- Understand the current panorama and discuss possible paths towards the educational future of the UGGps.

### 3. Context and Current Situation

The concept of “education” itself has undergone numerous modifications throughout history. Logically, an idea with such a wide range of perspectives and with such a complex network of ways of doing things, opinions and methodologies is impossible to conceive as a single element. Education is a living concept which is shaped based on society, culture and the moment in which we find ourselves, but it does not stop there; rather, each region and even each person understands and adapts their conception of education to such an extent that it increases the difficulty of understanding its evolution, making it complicated to define [19].

In addition to all this, the values and skills that we teach and intend to spread with the educational method change along with it and become variables to consider when applying different models or ways of teaching society. Currently, and thanks to the advancement of new technologies, online education, which used to be something that could be viable in the future but still had a lot to improve, has gained immense strength within educational plans and become a valid alternative for studies of all levels. The opportunities it offers, the ease, and the accessibility and adaptability options it generates have made it an indispensable tool for the educational system in just a few years [20]. The introduction of ICT and audiovisual elements in the classroom, such as the digital whiteboard, tablets, laptops or mobile phones, suggested that adaptation to the digital environment was imminent and, at present, it is difficult to find courses that do not offer this possibility in their educational offers [21,22].

All this educational adaptation has required an extra effort on the part of teachers, coordinators, students and families to be able to carry it out, but it has culminated in the creation of numerous “safe” initiatives and in proposals that had never previously arisen, but that have served to deal with this situation we find ourselves in. This is the case for outdoor activities, education in natural environments and the endless hours online that teachers from all over the world have had to teach, live and recorded. This process of conceptual change has only been possible thanks to the evolution of educational methods and concepts that, in parallel, have been including and using ICT as a valid learning method. Thanks to the fact that today’s society remains constantly connected by computers, mobile phones and, obviously, the Internet, it has been possible to carry out the massive monitoring of the progress of students within the academic year, which has allowed the evaluation of concepts to be something possible at a time when difficulties were real and very complicated for teaching teams to face [23]. In fact, teachers, researchers and coordinators have also had to adapt themselves, leading to a massive entry of professionals into the technology sector who, surely, had previously only partially considered the use of these tools as educational enhancers in their classrooms [24,25]. A door has been opened to society that has seen that the Internet is a valid learning resource and an essential element for the dissemination of knowledge at all academic levels, which teachers themselves can use to liven up their classes and facilitate the understanding of content. These tools have been fundamental in the educational adaptation that has occurred in recent years due to COVID-19. Teachers, researchers and, in general, teams at all educational levels have had to act quickly to reduce the repercussion of the crisis as much as possible and, thus, be able to continue with their proposed didactic plans [26]. All this, framed by the idea of sustainability, amends the educational cycle and modernizes it to, once again, intertwining leisure with learning and improving the cognitive process.

In relation to the educational concept, sustainability and sustainable development should be highlighted as two of the most important key points of recent years. Society is increasingly aware of the search for a model that allows the co-existence of people and the Planet in harmony. The first definition of the concept “sustainable development” was in the Brundtland Report of the World Commission on Environment and Development entitled “Our common future”, in 1987. This term referred to: “The satisfaction of the needs of the present generation without compromising the ability of future generations to meet their own needs”. There are records of its evolution in 1992, during the “Earth Summit” or “Rio Summit” in Rio de Janeiro. “Benayas, Calvo and Gutiérrez, referenced by OREALC

(2009:9), represents a global regulation of the strategies that mediate between environment and development relations." Starting in 1997, the idea of sustainable development was established. Then, in the "United Nations Decade of Education for Sustainable Development (2005–2014): International Application Plan", UNESCO focuses on the term together with its three basic pillars: the environment, society and the economy. This concept, although like sustainability, differs from it because it is the set of means and processes to achieve sustainable objective, which are the same as a "long-term goal".

Education is a key element and one of the fundamental nuclei of sustainable development, as important as the social or economic component could be. According to UNESCO in 2015, "Education for Sustainable Development (ESD)" acts in a way that "equips students with the necessary capacity to make informed decisions and carry out responsible activities in favor of environmental integrity, economic viability and social justice, for current and future generations, with due respect for cultural diversity". Likewise, it is a fickle concept that influences all the sustainable development goals (SDG) of the 2030 Agenda, even having one of its own, goal number 4, which is defined as "Ensuring inclusive, equitable and quality education and promote lifelong learning opportunities for all" (Table 1).

**Table 1.** Disaggregated list of the targets and indicators of SDG4 of the UNESCO 2030 Agenda.

SDG4 Targets	Indicators
4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.	Proportion of children and young people (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex and completion rate (primary education, lower secondary education, upper secondary education).
4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education.	Proportion of children aged 24–59 months who are developmentally on track in health, learning and psychosocial well-being, by sex and participation rate in organized learning (one year before the official primary entry age).
4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university.	Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex.
4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.	Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill.
4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations.	Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated.
4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy.	Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex.
4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.	Extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education and (d) student assessment.
4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all.	Proportion of schools offering basic services, by type of service.

Table 1. Cont.

SDG4 Targets	Indicators
4.b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small-island developing states and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programs, in developed countries and other developing countries.	Volume of official development assistance flows for scholarships by sector and type of study.
4.c By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small-island developing states.	Proportion of teachers with the minimum required qualifications, by education level.

The UNESCO Global Geoparks (UGGps) have managed to mark a before and after in sustainable development from an educational point of view. “UNESCO Global Geoparks are unique and unified geographical areas in which sites and landscapes of international geological importance are managed with a holistic concept of protection, education and sustainable development” [6]. Under this definition, there is a direct link with society and the people that make up these territories called Geoparks. Using geological heritage as a resource and education as a tool, the UGGps carry out a territorial development strategy that involves the local population to maximize their potential in a sustainable way. Taking advantage of geoheritage and defending the natural environment, the UGGps help us to learn in a multidisciplinary way about the territory and everything it contains. That is why the UGGps are authentic open-air laboratories [27] where, thanks to earth sciences, we can learn about history, culture and everything that is hidden within the territory. In addition, the union between non-formal and informal education, methods such as in-situ education or the autonomy of visiting them, make them potential natural classrooms where students and teachers of all academic levels can learn, enjoy and enhance values as educational keys in an entertaining and simple way [28]. Moreover, thanks to the particularity of their geological heritage, the UGGps have been used to study other planets, not only geologically speaking, but also training astronauts and professionals for future space trips to Mars and other planetary bodies [29]. This is the case of the Lanzarote and Chinijo Islands UGGps, whose similarity to the Martian soil and landscape has served as an educational tool for the European Space Agency (ESA) to prepare future missions to the red planet [30].

*“The walks through the almost Martian landscape of the Canary Island of Lanzarote have allowed the students of the Pangaea course to interpret the geological phenomena to understand the history of the formation of the island. Its goal is to help astronauts choose the best places to explore and collect rock samples” (ESA, 2022).*

This characteristic not only recognizes the educational capacity of the UGGps as educational territories, but also highlights the importance of the nature that these territories contain and their relevance at a socio-cultural level [31].

The UGGps are not only open to visits from anywhere in the world, but also involve the educational centers of the territory, creating a sense of unity that motivates students and teaches the importance of caring for the environment and the planet in which we live [32]. This is a very relevant factor now, where the situation of the concept of sustainability and environmental protection have taken shape and are found in the vast majority of the international organizations and institutional plans. In addition, the advancement of information and communication technologies has allowed the widespread dissemination of the message, bombarding society from all possible media such as television, internet or radio [33,34].

It is evident that, in this situation, the UGGps model has attracted attention, being destinations visited by millions of people each year. At the same time, the number of

UGGps has been increasing and, with them, the number of studies and amount of research dedicated to understanding these territories in innumerable ways, whether from the pure sciences, the social sciences, geography or history [35]. For this study, a sample composed of the Spanish and Portuguese UGGps has been selected. Currently, Spain has 15 UGGps (Table 2), being the second country in the world with the largest number of Geoparks, after China. Portugal has five UGGps spread throughout the country (Table 3). Each UGGps is different and has its own characteristics, not only because of the different geological environments that we can find, but also because of the way each one applies the concepts and educational methods. However, the common elements unite the model, and the fundamental pillars that govern the values of these areas allow us to understand the UGGps as a whole and not as individual territories. For this reason, the analysis carried out did not consider the differences, but rather the common factors that the UGGps present. In this case, the on-Line visibility of educational programs, methods, activities and events on the web pages of each UGGps were studied. As mentioned above, the boom in information and communication technologies has been exponential and has marked the last decade, changing the way we had of understanding society until now.

**Table 2.** List of current Spanish UGGps ordered in chronological order based on the date of their Global Geopark Network designated year.

Spanish UGGps	Declaration Year
Maestrazgo Cultural Park	2000
Cabo de Gata—Nijjar	2001
Sierras Subbéticas	2006
Sobrarbe—Pirineos	2006
Basque Coast	2010
Sierra Norte de Sevilla	2011
Villuercas-Ibores-Jara	2011
Cataluña Central	2012
Molina & Alto Tajo	2014
El Hierro	2014
Lanzarote and Chinijo Islands	2015
Las Loras	2017
Origenes	2018
Courel Mountains	2019
Granada	2020

**Table 3.** List of the current Portuguese UGGps arranged in chronological order based on the date of their Global Geopark Network designated year.

Portuguese UGGps	Declaration Year
Naturtejo	2006
Arouca	2009
Azores	2013
Terras de Cavaleiros	2014
Serra de Estrela	2019

Visibility is a key factor within the field of web technologies and the current social moment [36]. We live in an era where people receive significant amounts of information in the palm of their hand thanks to smart phones and the advancement of the internet. This information goes through our subconscious automatically and, in a few seconds, can help us decide, for example, if we choose a specific product, find out about a specific topic or, in this case, choose a destination to visit [37].

Tourism is the basis of the UGGps and what allows their constant operation, so having a good presentation with a website in good condition and of good quality is something necessary for these territories. Going further into the matter, one of the fundamental pillars of the UGGps is education in all its forms and variables, and that is why the online

exhibition of the activities, plans, methods or courses that are developed within they themselves is so important [38]. Not being visible on the internet currently translates into not existing for society, which has become accustomed to making quick searches on the net and opting for the most attractive links.

How does a website become attractive and attract the confidence of the Internet user? Factors such as the design, the layout of the elements, the source or the images and audiovisuals that we show on them are sometimes just as important as the content included in them [39,40]. The relationship between the variety of content, the constant updating of a website or the resources found on it through videos, image frames, PDFs or educational documents can give the exact key that the visitor to the web was looking for. The idea, drawn from marketing and advertising theories, of creating an identity or personal brand is not so far from the concept of on-Line visibility, and is influential by providing originality and character to a specific concept [41]. As Pérez stated in 2008 [40]: “Specifically, the personal brand could be understood as a combination of attributes transmitted through a name or a symbol, which influences the thinking of a certain public and creates value for its owner”. This means that having a “personal brand” translates into the generation of trust and expectations in the target audience and, therefore, it is essential to unite the online model of the UGGps to show a common message that represents the values of each UGGps. All this goes through a process in which the fusion of pillars and base values, the objectives set by the territories, the target audience, the study of the current situation and the design of a positioning and representation strategy allow the cognitive centralization of the brand and the final representation as a whole, and not as a denomination with infinite subdivisions. Cantone, in 2011 [42], pointed out a series of advantages of working on branding successfully that were summarized by Climent-Rodriguez and Navarro-Abal in 2017 [43] as:

- a. Being able to be known by your targets, that is, by your potential audience, the people who want to be known.
- b. Able to be differentiated from the rest of the professionals who may compete with you.
- c. Have the possibility of positioning yourself as an expert in your specialty.
- d. Favor the perception by others as a leader and facilitate the possession of effective networking.
- e. Help find partners and collaborators for new projects.
- f. Create many new opportunities related directly or not to your profession.
- g. Find new lines of professional activity, or recent partners and clients.

However, focusing on the educational factor as such, the context of visibility varies slightly and deviates from the base meaning. There is a variation of the concept outlining a simpler version that does not necessarily take into account SEO, positioning or personal branding [44]. It is about the ease of locating educational content within the website in a simple way for the visitor. Moreover, information and communication technologies allow us to camouflage the educational content, so they can be named as leisure, and simplify the way of obtaining knowledge, teaching without the public noticing they are learning [45]. This is the case, for example, of the educational audiovisuals and promotional videos that we can find about the UGGps. In most of them, we can see fascinating and immersive images that show us the genuine geological heritage of the territory, its cultures, customs and landscapes. This feeling of fascination creates a motivation to continue learning that, naturally, opens the viewer to the territory. Thanks to those few minutes, people are able to relate tourism inside the UGGps with three key factors: nature, culture and society [34,46]. The presence of this type of resource is absolutely necessary, since it introduces the environment to the target audience and motivates future browsing of the website. Simple menus, easy-to-find sections or information boxes are useful tools for locating the educational activities that are generated in the UGGps and can be easily implemented on web pages. These territories are authentic educational engines with respect to the field of natural sciences and general knowledge about everything that the territory contains; however, what can we find and how can we approach our passage through the

UGGps so that it is productive? That is the fundamental question that many teachers, interested and curious people, or professionals in the sector ask themselves when they directly access the website of a UGGps [47].

#### 4. Methodology

The process followed for the formalization of the graphs and the subsequent analysis was based on quantifying the presence of the variables mentioned below from a numerical rule 1–0, indicating with the value 1 the presence on the website and with the value 0 the absence. One by one, all the web pages of the Spanish and Portuguese UGGps were reviewed, giving a total of 20 study samples. All the data was arranged progressively in an Excel sheet that shows the set of variables and the analyzed UGGps. The quantification of qualitative variables is not only a useful tool for preparing studies, but also makes it easy to visualize factors and variables such as concepts, situations or connections which are generally impossible to observe. For this reason, and since “Education” is such a complex term to represent, we opted for its diversification and adaptation to the study environment, in this case, the UGGps. Throughout the analysis, the data were treated as anonymous and only the total results of the study were mentioned, grouped according to the country to which these territories correspond. Finally, for a better understanding of the educational situation on the websites of the UGGps analyzed, different graphs were created with the results obtained. For their design, the presence (value 1) or non-presence (value 0) of the categories mentioned below was represented. Giving a short example: Is there information about a defined educational project on the official UGGps website? If the response was positive, it was defined with the value “1” and reflected in the graphics as “verifiable”. If not, the category was defined with the value “0” and reflected as “not verifiable” in the graphical representations.

#### 5. Categories Description

This section lists and defines the variables selected for the study of educational presence within the web pages of the Spanish and Portuguese UGGps. With the idea of portraying the educational reality of these websites, online places such as educational centers, museums or the UGGps themselves were used as a reference, which are able to show all their educational potential on the network. All the variables are of great importance when it comes to drawing a model of how these territories work and not visiting them blindly [8]. Finally, 13 variables subdivided into 15 were defined, taking into account that number 10: “Primary, Secondary and University education programs” was analyzed separately and represented according to the presence or absence of said plans on the websites (Table 4). The positioning of the information within the website, the internal menus or the links were not analyzed as such, even though they are an important aspect, since they facilitate the search for information for Internet users. In this case, it was decided to dispense with said analysis since it would lead to an environment derived from the visibility of the information that would blur the focus of the study and would speak more about web design than about the educational framework itself.

##### 5.1. Defined Educational Project

Showing a well-defined educational project is essential when capturing the attention of teachers, counselors or curious people who access the UGGps website. The first impression is a key factor and, in the case of education, setting well-structured objectives, a conceptual map or an outline of the educational process during the visit will make a difference when choosing to carry out an activity or a visit alone with students or with family and friends. Being territories based on education, the first step to show is having a well-prepared educational project [48].



**Table 4.** Summary of the quantified and chosen variables to carry out the research about the visibility of education on the web pages of the Spanish and Portuguese UGGps. Variable number 10 “Primary, secondary and university education programs” was unified for its definition, since it represents the presence and visibility of the different plans or strategies within the same educational environment at different levels.

Quantified Variables	
1.	Defined educational project
2.	Educational programs
3.	Schools go to the UGGps
4.	The UGGps goes to schools
5.	UGGps pet/mascot
6.	Educational methodologies
7.	Complementary educational initiatives
8.	Downloadable educational documents
9.	Educational audiovisuals
10.	Primary, Secondary and University education programs
11.	Background—pastcourses
12.	Programs for Geosciences
13.	Educational programs on other topics

### 5.2. Educational Programs

From the teaching point of view, this is one of the most important categories, since it allows the preparation of the visit not only for the moment of its realization but also before and after it in the classroom. The activity program, the schedules and the key dates are essential in every academic section of the UGGps. Within the web pages, we can find them in posters, brochures or even in the text itself, as a subsection [49].

### 5.3. Schools Go to the UGGps

This category is based on the digital sample of the possibility of organizing school or educational groups and visiting the UGGp [50]. Within it, we can include facilities that the territory can provide such as organization, guides, and routes for the different academic groups or means of transport. Obviously, it is important to show this category visually, either in a web subsection, group images or explanatory videos on how to organize visits.

### 5.4. The UGGps Goes to Schools

This sector is of vital importance for the educational field, since it allows you to “visit” any UGGp without leaving the classroom. It is a key tool for centers to prepare thematic classes and future excursions or for others that do not have the possibility of traveling

to the territory at a specific time [12]. It is important to highlight this possibility on the web pages to open the range and allow academic centers to approach the UGGps without having to visit them.

#### 5.5. UGGps Pet/Mascot

Having a pet/mascot can be an interesting educational resource for young children. This could be reflected in the websites with activities, mini-games and didactic images that provide information on the adaptation of the concepts of the UGGps for all audiences. Many UGGps already make use of this tool to promote geosciences and sustainable values among the smallest of the house [51,52].

#### 5.6. Educational Methodologies

It is evident that the methodologies that we can find in these territories are a key factor within the mentality of teachers and those curious about deciding to visit these territories, either alone or with students. If the working methods are not attractive or not considered valid for the purpose of the visit, it will be very difficult to attract new visitors and promote educational plans. Fortunately, the combination of informal and non-formal education that exists in the UGGps makes them very complete educational experiences [53].

#### 5.7. Complementary Educational Initiatives

The presence of activities complementary to those normally carried out within the UGGps can be a claim not only to attract new visitors, but also encourage people who have visited the UGGps and have been amazed by its heritage and its people to come back and make the trip with a different approach. In addition, the presence of activities such as meetings, presentations, special events or characteristic days celebrations are synonymous with quality educational activity and, therefore, it is interesting when it is reflected on the web pages.

#### 5.8. Downloadable Educational Documents

PDF documents, educational videos, sheets, images, maps, brochures, etc. All downloadable educational material is positive when it comes to complementing the activities carried out in the UGGps and extrapolating everything learned to the classroom and to personal leisure. Resources such as these facilitate the understanding of concepts and enhance the educational experience of visitors [54].

#### 5.9. Educational Audiovisuals

The advancement of information and communication technologies has made possible, with relatively few resources, the availability of incredible audiovisual materials to show the peculiarities of the UGGps to the whole world. The presence of an educative promotional video about what we can find in the Geopark on the website is something very necessary nowadays [55].

#### 5.10. Primary, Secondary and University Education Programs

The presence of these educational offers on the web pages of the UGGps can guide teachers of all educational levels about the adaptability of the routes or the workshops that the Geoparks offer to their educational visits. The existence of these plans can be seen in past or future activities, talks or downloadable brochures, where the content can be evaluated and it decided whether it is suitable for the level of the students who wish to visit the territory [1,56].

#### 5.11. Background—Past Courses

Showing publicly how past courses or events in old editions have been developed can be a sign of quality and a reason to consider visiting a territory, attend an event or develop a course with students. If there is a reference to how the activities have progressed

in previous years, it will be easier for those interested to obtain an idea from the website of how the Geopark works, specifically regarding to the environment and involvement that it is capable of creating during the realization of an educational proposal.

#### 5.12. Programs for Geosciences

UGGps are territories strongly focused on Geotourism and Geosciences. What kind of programs do you carry out within these subjects? Do you have geological guides of the Geopark? Are there specific events depending on the date of the visit? These and other questions are the ones that connoisseurs and curious people ask themselves when visiting the UGGps web pages to find out more about their content. It is important, even if it is clear from the beginning, to highlight the activities carried out in the territories and publicize them to promote social participation and the generation of new events and educational opportunities.

#### 5.13. Educational Programs on Other Topics

Although the UGGps focus their educational activity on geology and earth sciences, we can also find a perfect connection between society and the environment. That is why the history of the territory, traditions or gastronomy play a fundamental role within the UGGps themselves and provide them their own identity. It is a reality that geology is essential in the UGGps, but without the people who live in them every day, said Geopark could not exist as itself. For this reason, the elaboration of routes, conferences, meetings or talks aimed at identifying the traditions and ways of life of the society that makes up the territory make it interesting to understand the social situation and the reason for the panorama that exists within the UGGps.

## 6. Results

The results presented below are divided into two sections according to the UGGps analyzed and the countries in question. The first section, showing the data from the Spanish UGGps, comprises the first 13 variables (Figure 1), while the second shows the last three (Figure 2). In the same way, Figures 3 and 4 correspond to the first and second sections of the Portuguese UGGps. All the data was organized and defined in graphs to offer a visual perspective of the situation of education in the analyzed web pages.

Finally, a comparative graph of all the variables was drawn up where the differences in the visibility of education in the online offer of the Spanish and Portuguese UGGps can be clearly observed (Figure 5). The obtained results give us a broad view of the situation of education in the web pages of the Spanish and Portuguese UGGps. There is no doubt that the sample differs considerably, since we are comparing the results obtained from 15 Spanish UGGps directly with those obtained from the five Portuguese UGGps.

In the representation of the results, the visibility of content was not taken into account in any of its meanings (either in the nature of SEO or in the ease of finding information within websites). Although they were taken into account for the discussion and conclusions, quantifying and representing these variables could guide the study to other fields that are outside the educational framework. It is important to emphasize that, although they are essential elements, they do not influence the presence or not of said information and, therefore, they were excluded from the variables analyzed. All the results are shown anonymously to represent a general framework of how we find the situation of education in the different UGGps websites. The intention of this study is not to make a critical representation of the online educational environment, but, with the utmost respect possible, to promote these territories as great educational alternatives and improve the current model with data, proposals and possible solutions.

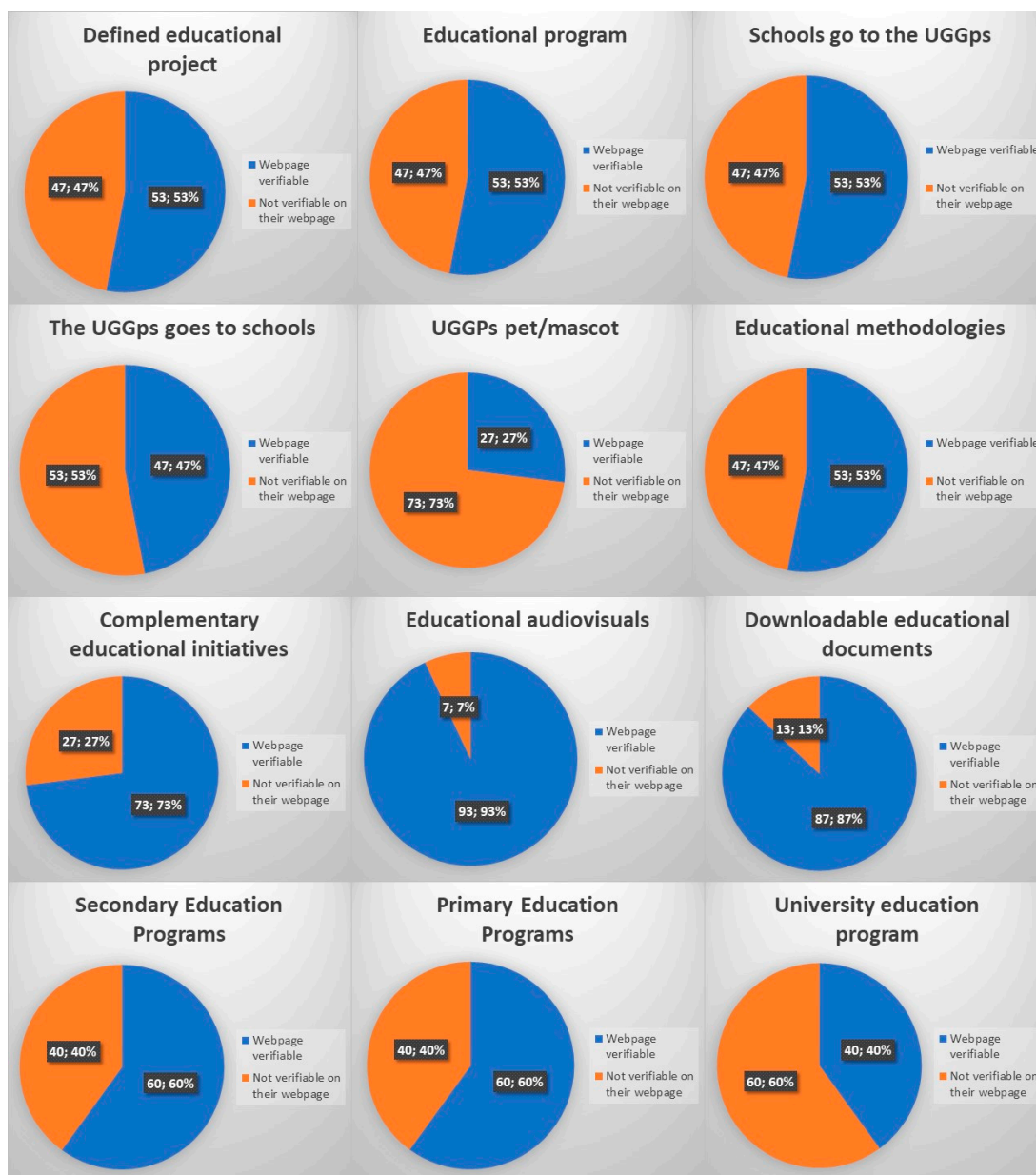


Figure 1. Graphic representation of the first 13 variables analyzed with respect to the visibility of education on the web pages of the Spanish UGGPs.

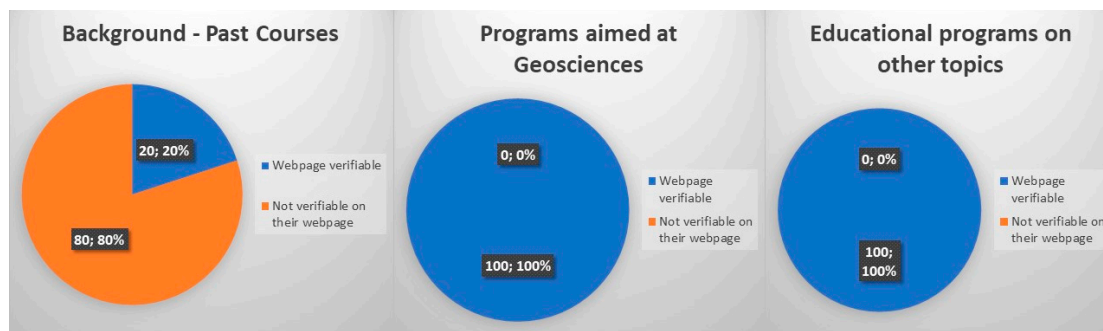


Figure 2. Graphic representation of the last three variables analyzed with respect to the visibility of education on the web pages of the Spanish UGGPs.

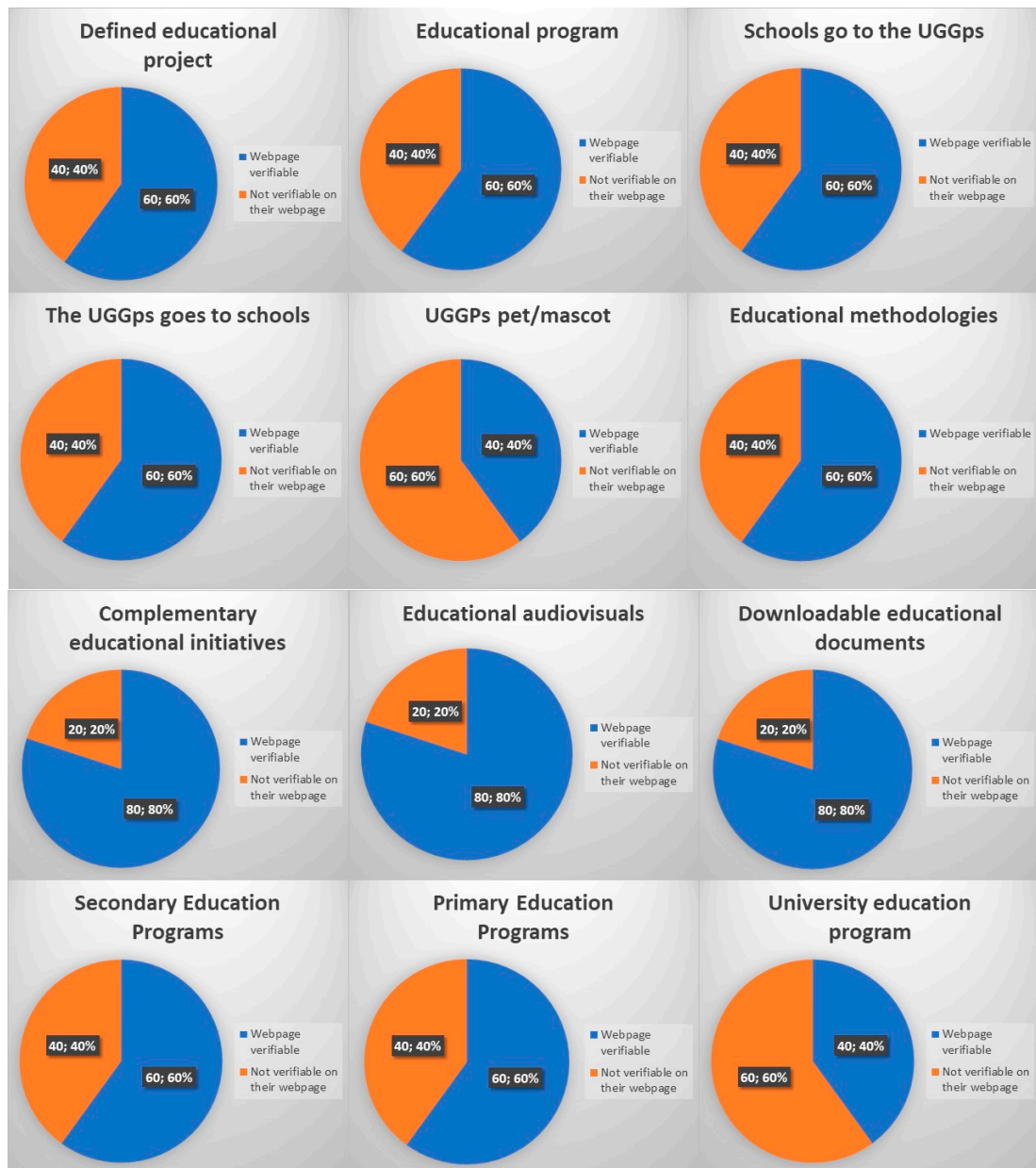


Figure 3. Graphic representation of the first 13 variables analyzed with respect to the visibility of education on the web pages of the Portuguese UGGps.

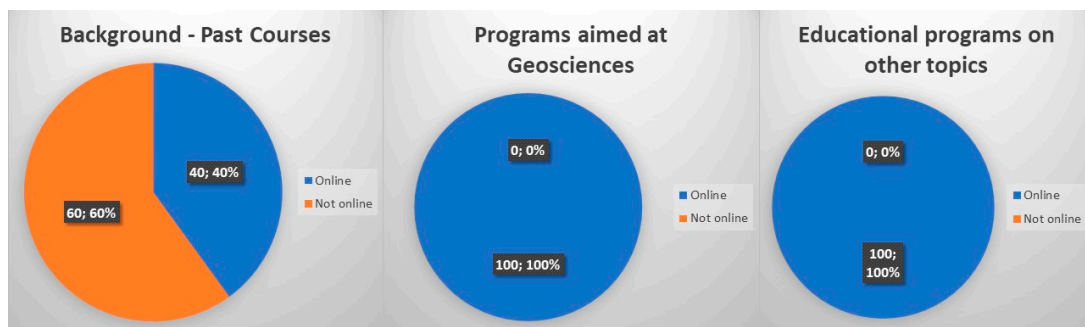
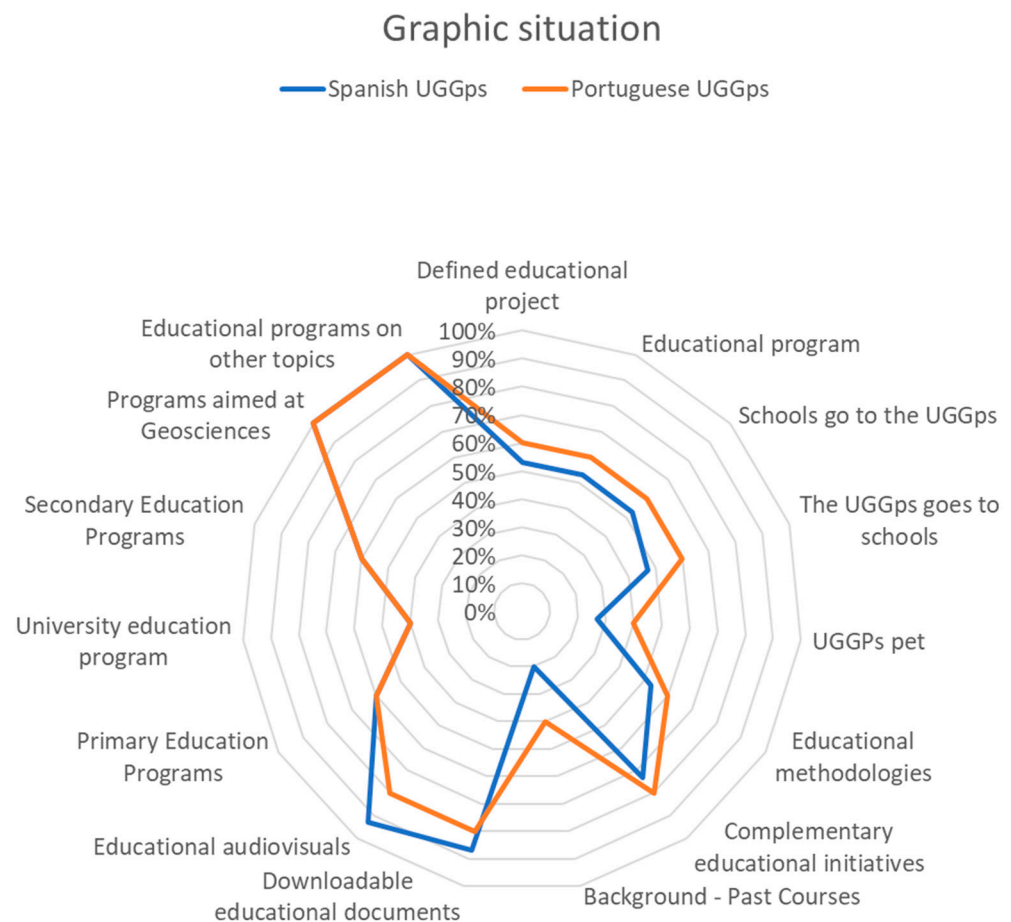


Figure 4. Graphic representation of the last three variables analyzed with respect to the visibility of education on the web pages of the Portuguese UGGps.



**Figure 5.** Graphic comparison of the visibility of education in the online offer of the Spanish and Portuguese UGGps.

### 7. Discussion

Online visibility is an important concept nowadays, where the Internet and the advancement of information and communication technologies have marked a new way of working, promoting and teaching [57]. Developing models and methodologies have evolved drastically until reaching a point where the audiovisual stands out and attracts everyone’s attention. Society has become accustomed to having all possible information in the palm of its hand [58] thanks to smart phones or tablets, and tries to find out as much as possible about destinations, routes and territories before preparing a trip [59]. Destinations should be promoted in such a way that the number of visitors increases and, in the alternative context of the concept itself, it should be encouraged that web design facilitates the search for educational information. It is necessary that content is easy to locate within the website, adapted and accessible to everyone. This not only falls within the fundamental educational pillars of the UGGps, but also in the branch of objective number 4 of the SDGs of the 2030 Agenda. Updating web pages and positioning information strategically can be a fundamental factor for visitors when selecting a territory as a future destination. That is why the need to show all the possibilities has become a long-distance race of continuous updating, in which all the existing sectors participate every day, many times, even without realizing it. In the results obtained from the web pages analyzed, a reality can be highlighted: It is difficult to know what activities or projects are carried out daily in these territories simply by visiting their website, which is the largest showcase that can be used for promotion on the Internet. It would be fine to have menus or examples of how the UGGps works in the activities inserted in the website. Being territories focused on education, and this being an essential pillar for its operation, it is interesting to observe

these results and realize that, in the eyes of the Internet and what is shown from their own web pages, many of the activities carried out in the UGGps remain totally invisible and overshadowed by other factors. The result culminates in the image that the UGGps are places with a remarkable geological heritage where you can enjoy nature, but nothing more. This is something completely incorrect and totally differs from the very definition of the UGGps concept. The UGGps are essential places for the future of society. Acting as laboratories and classrooms in the open air [27], they teach us in a multidisciplinary way every loophole that the territory hides. Science, history, and tradition, etc. all this is condensed and shown to the public from the UGGps. In addition, they are territories with tremendous potential when it comes to teaching not only in a sustainable way, but also the very concept of sustainability and how to apply it. In short, the UGGps are essential outdoor experiences for the future and, observing the results, we realize that many of these characteristics, which could be shown from the point of view of education, remain hidden, are difficult to find or, directly, are not shown on their official pages. According to the statistics obtained, there are many web pages of the Spanish and Portuguese UGGps in which we cannot find an educational program, background, or even ways to visit the Geopark or tools to move the Geopark to the classrooms. It is true that there are variables that stand out from others, such as the existence of promotional audiovisuals. This is something necessary, as mentioned above, and very attractive in view of the heritage panorama and the visibility of geology and Earth Sciences; however, on many of the websites, it is not possible to find an educational variant, or it is unclear with regards to the importance given to the environment and the landscape. It is also true that, while some web pages are very complete and detailed, with a large number of the variables visible and easily navigable, there are many others that are outdated and need an update of content to be closer to the current quality web standards. The key lies in building trust through the quality of the website, and this is an essential factor in the age we live in. It is important to underline the importance of visibility, since no matter how well the UGGps acts or how innovative the projects carried out are, if they are not visible, they do not exist for the majority of society. In addition, during the investigation, it was detected that the UGGps websites were very different from each other. It is logical that each UGGps has its style, since, although the fundamental pillars are shared by all UGGps, their differences are the key factor for allowing each one to be different faces of the same model. However, and following the theme of web visibility and the importance of generating trust in the visiting public, it is important to consider branding as a tool to attract public attention. The creation of a common domain, a brand-new model or the use of a similar structure for web pages could be a start to carry out this unification and, thus, present a brand style of the UGGps. If we put ourselves in the shoes of a teacher who needs to know how the educational activities of a UGGps work, how they have been changing in recent years or how they adapt to the academic curriculum that he intends to teach, we find certain difficulties within the website of some UGGps to locate the vast majority of the educational content that is generated within these territories. It is understandable that, if there really is this interest in visiting the Geopark, the visitor obtains extensive information, not only by searching the website, but also by calling the interpretation centers or the places they wish to visit. However, neglecting something as important as the web page of the territories is something that not only eliminates visiting opportunities, but also gives a bad impression when it comes to knowing and expanding knowledge about the territory. Internet is a spectacular promotional tool and, right now, essential in the times in which we live. Places as interesting and useful for society from an educational point of view as the UGGps should be promoted and deserve to be presented as a visible educational offer within networks to enhance their operation and maximize the tourism that occurs within them. Nowadays, we are experiencing a technological explosion that we can take advantage of to further emphasize the importance of quality education and create a socio-planetary synergy through which we can live together sustainably [60]. For this, it is necessary to enter the world of new technologies, such as virtual reality, and create a “Virtual Geopark” [61]. This not only allows

tours without getting up from the sofa but can be used as an educational method which allows UGGps to connect with part of society that does not have the possibility of traveling for visits and creates an educational experience adapted and accessible to all [62–64]. This is just a small example of what new technologies can contribute. In fact, it can be already found small traces of the presence of UGGps in this area, such as the free app “Geotours,” which allows you to explore the “European Atlantic Geotourism Route” in a simple and attractive way using mechanics of augmented reality [65] or some tests of gamifying the UGGps method [66]. In the app, we can download routes, digitally visit several of the most emblematic Geosites of the UGGps and win collectibles and medals that make its use more enjoyable and easier. Finally, UGGps stand out as educational territories in the field of Earth Sciences and sustainability. Their innovative methods and their mix of non-formal and informal educational programs make them true educational engines which constitute an alternative, attractive and original scenario within the current academic *curricula*. The transition to online education produced by the advancement of new technologies and the events that have occurred in recent years in relation to COVID-19 pandemic [10,67] have made the UGGps incredible educational alternatives which provide a safe, enjoyable and simple educational environment for every level. That is why the work must continue to make all kinds of activities visible in order to continue growing and spreading the message of quality, accessible and adapted education for all. The UGGps teach us to unravel the hidden message behind the landscape, to discover incredible cultures, traditions and places and that is why their daily work needs to be promoted and their potential demonstrated. The idea of creating a sustainable model in which society, nature and the economy can coexist and complement each other is closer every day and, in order fully achieve it, the UGGps educational work is essential.

## 8. Conclusions

The UGGps stand out as educational territories focused on the development and protection of natural heritage. Little by little, they have been building a reputation thanks to the activities, courses, plans and methods they use to communicate everything that is contained in the territory. Thanks to science, history, traditions and the spectacular nature of the environment that we enjoy in these places, the UGGps exist by and for the people, this being their fundamental objective. Web pages are equivalent to small windows that society can visit to echo what is happening in certain places and quickly determine whether it is of interest to them. Therefore, it is essential that these websites show reality in a clear, simple and adapted way for everyone. Being one of the most interesting digital showcases today, the UGGps must channel all their educational content and capture it in their web pages to show why they are ideal places to visit for teachers, those interested, those curious or anyone who has an interest in learning about a specific territory. That is why the possibility of unifying the web pages of the UGGps should be studied, not only in the educational field, but also in the visual field. Network visibility and the correct presence of content, as well as branding and personal image, are essential and differentiating factors on the network to stand out and communicate our message effectively. Virtual reality, digital applications, downloadable documents and educational audiovisuals are just some of the resources that are beginning to be used in the educational field and that, step by step, UGGps are beginning to implement within their toolkit to update, adapt and compile information that reaches everyone. For now, numerous paths and new opportunities are opening in the education sector that imply educational quality and accessibility at all levels, and the UGGps are continuously adapting to stay on trend. In short, the UGGps are and will continue to be relevant places in terms of education, and their adaptation to the digital medium is a process that has already begun and must continue, to highlight their importance in achieving a future that is more respectful of the planet and the people who live in it and, ultimately, more sustainable for everyone.

**Author Contributions:** Writing—original draft, J.E.M.-M.; Supervision, P.E.M., E.M.R.-G. and A.A.S. All authors have read and agreed to the published version of the manuscript.



**Funding:** This research received no external funding.

**Data Availability Statement:** Not applicable.

**Acknowledgments:** This study has been financially supported by the UCJC-Santander scholarship of excellence for the promotion of research.

**Conflicts of Interest:** The authors declare no conflict of interest.

## References

1. Fernández Álvarez, R. Los geoparques como recurso para la enseñanza-aprendizaje del espacio geográfico en Educación Primaria: El paisaje de las áreas de montaña. *Didáctica Geográfica* **2019**, *20*, 27–53. [CrossRef]
2. Rocha Da Silva, E.M. *The Contribution of the European UNESCO Global Geoparks for the 2030 Agenda for Sustainable Development—A Study Based on Several Data Sources*; Universidade NOVA de Lisboa: Lisbon, Portugal, 2020.
3. Rosado-González, E.M.; Sá, A.A.; Palacio-Prieto, J.L. UNESCO Global Geoparks in Latin America and the Caribbean, and Their Contribution to Agenda 2030 Sustainable Development Goals. *Geoheritage* **2020**, *12*, 36. [CrossRef]
4. Henriques, M.H.; Tomaz, C.; Sá, A.A. The Arouca Geopark (Portugal) as an educational resource: A case study. *Episodes* **2012**, *35*, 481–488. [CrossRef]
5. Rodrigues, J. Pedagogical Geosciences tools to explain Naturtejo Geopark in both non-formal and formal environments. In *Libro de Ponencias II Conferencia del Proyecto Geoschools: Geología y Sociedad: Alfabetización Geocientífica*; Publicaciones del Seminario de Paleontología de Zaragoza; Universidad de Zaragoza: Zaragoza, Spain, 2012. [CrossRef]
6. UNESCO. What is a UNESCO global geopark? 2022. Available online: <http://www.globalgeopark.org/aboutGGN/6398.htm> (accessed on 19 February 2022).
7. Jones, C. History of Geoparks. *Geol. Soc. Lond. Spéc. Publ.* **2008**, *300*, 273–277. [CrossRef]
8. Blanco, C.M.-C.; Castro, A.B.S. El muestreo en la investigación cualitativa. *NURE Investig. Rev. Científica Enfermería* **2007**, *27*, 1–4.
9. Bonilla-Guachamín, J.A. Las dos caras de la educación en el COVID-19. *CienciaAmérica* **2020**, *9*, 89–98. [CrossRef]
10. Martini, B.G.; Zouros, N.; Zhang, J.; Jin, X.; Komoo, I.; Border, M.; Watanabe, M.; Frey, M.L.; Rangnes, K.; Van, T.T.; et al. UNESCO Global Geoparks in the "World after": A multiplegoals roadmap proposal for future discussion. *Episodes* **2022**, *45*, 29–35. [CrossRef]
11. Henriques, M.H.; Canales, M.L.; García-Frank, A.; Gomez-Heras, M. Accessible Geoparks in Iberia: A Challenge to Promote Geotourism and Education for Sustainable Development. *Geoheritage* **2019**, *11*, 471–484. [CrossRef]
12. Reuben, R. The Use of Social Media in Higher Education for Marketing and Communications: A Guide for Professionals in Higher Education. 2008. Available online: <https://rachelreuben.com/2008/08/19/social-media-uses-higher-education-marketing-communication/> (accessed on 22 April 2022).
13. Maignan, I.; Lukas, B.A. The Nature and Social Uses of the Internet: A Qualitative Investigation. *J. Consum. Aff.* **1997**, *31*, 346–371. [CrossRef]
14. Aires, L.; Dias, P.; Azevedo, J.; Rebollo, M.; García-Perez, R. Education, digital inclusion and sustainable online communities. In *E-Learning and Education for Sustainability*; Azeiteiro, U.M., Leal Filho, W., Caeiro, S.S., Eds.; Peter Lang D. International Academic Publishers: Bern, Switzerland, 2014; pp. 263–273. [CrossRef]
15. Hellqvist, M. Teaching Sustainability in Geoscience Field Education at Falun Mine World Heritage Site in Sweden. *Geoheritage* **2019**, *11*, 1785–1798. [CrossRef]
16. Locke, S.; Libarkin, J.; Chang, C.-Y. Geoscience Education and Global Development. *J. Geosci. Educ.* **2012**, *60*, 199–200. [CrossRef]
17. Stewart, I. Sustainable geoscience. *Nat. Geosci.* **2016**, *9*, 262. [CrossRef]
18. Vasconcelos, C. (Ed.) *Geoscience Education*; Springer International Publishing: Berlin/Heidelberg, Germany, 2016. [CrossRef]
19. Gardner, H. How education changes. In *Globalization: Culture and Education in the New Millennium*; University of California Press: Oakland, CA, USA, 2004; pp. 235–258.
20. Sun, A.; Chen, X. Online Education and Its Effective Practice: A Research Review. *J. Inf. Technol. Educ. Res.* **2016**, *15*, 157–190. [CrossRef]
21. Abarzúa, A.; Cerda, C. Integración curricular de TIC en educación parvularia. *Rev. Pedagog.* **2011**, *32*, 13–43.
22. García Sánchez, M.d.R.; Reyes Añorve, J.; Godínez Alarcón, G. Las Tic en la educación superior, innovaciones y retos [The ICT in higher education, innovations and challenges]. *RICSH Rev. Iberoam. Cienc. Soc. Hum.* **2017**, *6*, 299–316. [CrossRef]
23. García-Peñalvo, F.J.; Corell, A.; Abella-García, V.; Grande, M. La evaluación online en la educación superior en tiempos de la COVID-19. *Educ. Knowl. Soc.* **2020**, *21*, 26. [CrossRef]
24. Adell Segura, J.; Sales Ciges, A. El profesor online: Elementos para la definición de un nuevo rol docente. In *Proceedings of the IV Congreso de Nuevas Tecnologías de la Información y de la Comunicación para la Educación. Nuevas Tecnologías en la Formación Flexible y a Distancia*, Seville, Spain, 14–17 September 1999; Universidad de Sevilla; Secretariado de Recursos Audiovisuales y Nuevas Tecnologías: Seville, Spain, 1999; pp. 1–15.
25. Ferrada-Bustamante, V.; González-Oro, N.; Ibarra-Caroca, M.; Vergara-Correa, D.; Castillo-Retamal, F.; Ried-Donaire, A. Formación docente en TIC y su evidencia en tiempos de COVID-19. *Rev. Saberes Educ.* **2021**, *6*, 144. [CrossRef]

26. Sandoval, C.H. La Educación en Tiempo del Covid-19 Herramientas TIC: El Nuevo Rol Docente en el Fortalecimiento del Proceso Enseñanza Aprendizaje de las Prácticas Educativa Innovadoras. *Rev. Tecnológica* **2020**, *9*, 24–31. [CrossRef]
27. Silva, E.; Sá, A.A. Educational challenges in the Portuguese UNESCO Global Geoparks: Contributing for the implementation of the SDG 4. *Int. J. Geoheritage Park.* **2018**, *6*, 95–106. [CrossRef]
28. González Tejada, C.; Girault, Y. Los Geoparques Mundiales de la UNESCO en España: Entre divulgación científica y desarrollo turístico. *Cuad. Geográficos* **2021**, *60*, 255–274. [CrossRef]
29. Martínez, J.E.; Mariñoso, P.E. Timanfaya lava flows geosite: A historical and educational approach. *Int. J. Earth Sci.* **2020**, *109*, 2697–2698. [CrossRef]
30. Martínez-Frías, J.; Mateo, E. Lanzarote: Mars on Earth. In *Lanzarote and Chinijo Islands Geopark: From Earth to Space*; Mateo, E., Martínez-Frías, J., Vegas, J., Eds.; Springer International Publishing: Berlin/Heidelberg, Germany, 2019; pp. 143–148. [CrossRef]
31. Martínez Frías, J.; Mateo Mederos, M.; Lunar Hernández, R. Los geoparques como áreas de investigación, geoeducación y geoética en geociencias planetarias: El geoparque de Lanzarote y Archipiélago Chinijo. *Geotemas* **2016**, *16*, 343.
32. Catana, M.M.; Brilha, J.B. The Role of UNESCO Global Geoparks in Promoting Geosciences Education for Sustainability. *Geoheritage* **2020**, *12*, 1. [CrossRef]
33. Farsani, N.T.; Coelho, C.; Costa, C.; Neto de Carvalho, C. (Eds.) *Geoparks and Geotourism—New Approaches to Sustainability for the XXI Century*; BrownWalker Press: Boca Raton, FL, USA, 2012.
34. Fassoulas, C.; Nikolakakis, E.; Staridas, S. Digital Tools to Serve Geotourism and Sustainable Development at Psiloritis UNESCO Global Geopark in COVID Times and Beyond. *Geosciences* **2022**, *12*, 78. [CrossRef]
35. Farsani, N.T.; Coelho, C.O.A.; Costa, C.; Amrikazemi, A. Geo-knowledge Management and Geoconservation via Geoparks and Geotourism. *Geoheritage* **2014**, *6*, 185–192. [CrossRef]
36. Rowley, J. Online branding. *Online Inf. Rev.* **2004**, *28*, 131–138. [CrossRef]
37. Bansal, M.; Sharma, D. Improving webpage visibility in search engines by enhancing keyword density using improved on-page optimization technique. *Int. J. Comput. Sci. Inf. Technol.* **2015**, *6*, 5347–5352.
38. Fernández-Cavia, J.; Fabra, B.U.P.; Castro, D. Comunicación y branding en los sitios web nacionales de turismo. *Cuad. Info* **2015**, *37*, 167–185. [CrossRef]
39. Berry, L.H. Cognitive effects of web page design. In *Instructional and Cognitive Impacts of Web-Based Education*; IGI Global: Hershey, PA, USA, 2000; pp. 41–55.
40. Pérez-Ortega, A. *Marca Personal: Cómo Convertirse en la Opción Preferente*; ESIC: New Delhi, India, 2008.
41. Powell, T.A.; Jones, D.L.; Cutts, D.C. *Web Site Engineering: Beyond Web Page Design*; Prentice-Hall, Inc.: Hoboken, NJ, USA, 1998. [CrossRef]
42. Cantone, D. Como Elaborar tu Estrategia de Personal Branding Paso a Paso. 2011. Available online: <http://Davidcantone.Com/About> (accessed on 16 March 2022).
43. Climent-Rodríguez, J.-A.; Navarro-Abal, Y. Branding y reputación: Pilares básicos de la visibilidad online del profesor de educación superior. *Rev. Iberoam. Educ. Super.* **2017**, *8*, 66–76. [CrossRef]
44. Vanegas, C.A.; Pinzón Núñez, S.A. Accesibilidad en el diseño de páginas web. *Vinculos* **2012**, *9*, 177–190. [CrossRef]
45. Cuberos, R.C.; Sánchez, M.C.; Ortega, F.Z.; Garcés, T.E.; Martínez, A.M. Videojuegos activos como recurso TIC en el aula de Educación Física: Estudio a partir de parámetros de ocio digital-Active Videogames as ICT tool in Physical Education classroom: Research from digital leisure parameters. *Digit. Educ. Rev.* **2016**, *29*, 112–123.
46. Brilha, J.B.R.; Legoinha, P.A.R.; Butler, J. The Internet and the Geology teaching in Portugal. *Comput. Geosci.* **1999**, *25*, 205–206.
47. Pereira, D.I.; Ramos, I.; Medina, W. Are Geoparks webpages attractive to potential tourists? Some results of an evaluation procedure. In Proceedings of the International Congress Arouca 2011 Geotourism in Action, Arouca, Portugal, 9–13 November 2011; 2011; pp. 159–161. Available online: <http://hdl.handle.net/1822/15202> (accessed on 10 April 2022).
48. Adams, D. Defining educational quality. *Improv. Educ. Qual. Proj. Publ.* **1993**, *1*, 1–24.
49. Glumac, O.; D’Arcy, G.; de Sousa Morais, M.R.C. Co-creation and Co-design of Educational Programmes with Young People: A Comparative Study Between Dublin and Porto. In *Perspectives on Design II*; Springer: Berlin/Heidelberg, Germany, 2022; pp. 61–76. [CrossRef]
50. Lin, J.-C.; Su, S.-J. Environmental Education for Geoparks—Practices and Challenges. In *Geoparks of Taiwan*; Springer: Berlin/Heidelberg, Germany, 2019; pp. 105–118. [CrossRef]
51. Del Mazo, I.; Bonilla Leo, A.; Carnicer Corchero, M.d.P.; Caro López, M.C.; García Iglesias, S.; Gil Pacheco, M.I.; Gordillo Valenzuela, J.; Jara Álvarez, P.; Muñoz Calderón, C.; Parejo Sánchez, A.; et al. Geopaca Folk: Rustic Performance on the Road. 2020. Available online: <https://hdl.handle.net/11162/206523> (accessed on 16 March 2022).
52. Velaz Sánchez, M.; Gándara Carretero, I.; Bonilla Leo, A. Geopaca: De Mascota a Influencer. 2019. Available online: <https://hdl.handle.net/11162/201744> (accessed on 13 May 2022).
53. Rodrigues, J.; de Carvalho, C.N.; Ramos, M.; Ramos, R.; Vinagre, A.; Vinagre, H. Geoproducts—Innovative development strategies in UNESCO Geoparks: Concept, implementation methodology, and case studies from Naturtejo Global Geopark, Portugal. *Int. J. Geoheritage Parks* **2021**, *9*, 108–128. [CrossRef]
54. Kim, J.Y.; Fienup, D.M. Increasing Access to Online Learning for Students with Disabilities During the COVID-19 Pandemic. *J. Spéc. Educ.* **2022**, *55*, 213–221. [CrossRef]

55. Pattier, D. Teachers and Youtube: The use of video as an educational resource. *Ric. Pedagog. Didatt. J. Theor. Res. Educ.* **2021**, *16*, 59–77. [[CrossRef](#)]
56. Wang, J.; Zouros, N. Educational Activities in Fangshan UNESCO Global Geopark and Lesvos Island UNESCO Global Geopark. *Geoheritage* **2021**, *13*, 51. [[CrossRef](#)]
57. Pujadas, F.J.C. Impacto de las nuevas tecnologías en la masificación de la educación. *Rev. Sci.* **2019**, *4*, 173–187. [[CrossRef](#)]
58. Correa, R.I. La sociedad mesmerizada: Medios, nuevas tecnologías y conciencia crítica en educación. In *La Sociedad Mesmerizada*; Universidad de Huelva: Huelva, Spain, 2019.
59. Varela-Ordorica, S.A.; Valenzuela-González, J.R. Uso de las tecnologías de la información y la comunicación como competencia transversal en la formación inicial de docentes. *Rev. Electrónica Educ.* **2020**, *24*, 1–20. [[CrossRef](#)]
60. Marte-Espinal, R. Uso de las tecnologías en la educación. In *Revista: Atlante. Cuadernos de Educación y Desarrollo*; Universidad de Málaga: Málaga, Spain, 2017; pp. 1–9.
61. Cortés, F.P.; Rebolledo, A.M.; Zamorano, P.G.; Ossandón, J.M.; Montaña, A.; Obreque, M.K.; Castro, G.R.; Oñate, J.J.; Ulloa, M.E.; Kuschel, P.H. El geo-parque virtual y los módulos de aprendizaje: Una propuesta de aprendizaje sobre los riesgos naturales. In *Nuevas Ideas en Informática Educativa Memorias del XVII Congreso Internacional de Informática Educativa*; TISE: Santiago, Chile, 2012; pp. 434–440.
62. Hincapié Montoya, M.; Valencia-Arias, A.; Fernandez, J.; Cuéllar Rojas, Ó. Aplicaciones de Realidad Aumentada y Realidad Virtual en Geociencias: Un análisis bibliométrico. In *Un Análisis de los Campos de la Ingeniería: Usos y Aplicaciones*; Americana: Barranquilla, Colombia, 2020; pp. 95–109.
63. Lege, R.; Bonner, E. Virtual reality in education: The promise, progress, and challenge. *JALT CALL J.* **2020**, *16*, 167–180. [[CrossRef](#)]
64. Flores Tena, M.; Ortega Navas, M.C.; Sánchez Fuster, M.C. Las nuevas tecnologías como estrategias innovadoras de enseñanza-aprendizaje en la era digital. *Rev. Electrónica Interuniv. Profr* **2021**, *24*, 29–42. [[CrossRef](#)]
65. Elmqaddem, N. Augmented Reality and Virtual Reality in Education. Myth or Reality? *Int. J. Emerg. Technol. Learn.* **2019**, *14*, 234. [[CrossRef](#)]
66. Pereira, D.; da Gama, K.S.; Silveira, C.B.d.M.; Dias e Cordeiro, I. Creación de un prototipo y test de una aplicación para la gamificación de la visita al geoparque de Araripe (Ceará-Brasil). *Estud. Perspect. Tur.* **2019**, *28*, 1021–1031.
67. Monasterio, D.; Briceño, M. Educación mediada por las Tecnologías: Un desafío ante la coyuntura del COVID-19. *Obs. Conoc.* **2020**, *5*, 100–108.

**Disclaimer/Publisher's Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.