

Gastronomy, Intercultural Knowledge and ICT. Video Games in Learning Local Gastronomy

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ABSTRACT

Gastronomic knowledge is an integral part of the culture of towns, regions and localities, as it reflects their history, traditions and natural resources. Local culinary ingredients and techniques are passed down from generation to generation, preserving cultural identity and strengthening the sense of belonging. In addition, local gastronomy promotes the use of native products, supports the regional economy and sustains biodiversity. Community festivities and celebrations often focus on food, which reinforces social togetherness. Thus, gastronomy is a living manifestation of culture that connects people with their environment and cultural heritage. In this analysis, gastronomic knowledge is shown as part of the culture of towns, regions and localities. In this context, the relevance of Information and Communication Technologies (ICT) is evident, through a video game to support the learning of gastronomic cultural content. Through research with a quantitative approach, a video game with gastronomic content was tested to contribute to intercultural knowledge, in a test group of basic education students. The results obtained showed the relevance and versatility of recreational technological resources for learning cultural content.

Keywords: Gastronomy, ICT, Video games, Interculturality.

INTRODUCTION

Interculturality has the potential to explore individuals' right to personal, gender, and generational identity. It establishes that peoples have the right to an ethnic, regional and national identity. Peoples and individuals have specific collective rights that, added to individual rights, generate a right to tangible and intangible cultural heritage, in order to include and give a sense of historical continuity to the global diversity that builds the homeland for all⁽¹⁾. In the same sense ⁽²⁾, it states:

(...) interculturality indicates and signifies processes of construction of another knowledge, of another political practice, of another social (and state) power and of another society; another form of thought related to and against modernity/coloniality, and another paradigm that is thought through political praxis. (p. 47)

Within the cultural expressions of the peoples, the area of food refers to a theme that still has a vast field to explore. In Ecuador, food products and their preparation are part of the national identity of its people, as in other parts of Latin America, for the purposes of globalization processes, gastronomy is in a process of absorption by foreign influences. Fast food chains have taken up a lot of space from what used to be for local dishes. At present, foreign options can be found in coexistence with local ones, which shows a pending task that goes from homes to academia ⁽³⁾.

From government institutions, *Ecuador Culinario. Saberes y Sabores* ⁽⁴⁾ is a descriptive work, compiling the most representative dishes of each province. In the same way, there are several university works from the corresponding faculties and careers, which contribute to Ecuadorian gastronomy, some such as ⁽⁵⁾, ⁽⁶⁾ and ⁽⁷⁾, which focus on the preservation and promotion of Ecuadorian identity through its typical dishes. These studies focus on the research and documentation of traditional recipes, ancestral culinary techniques and the use of indigenous ingredients, which help to safeguard the country's gastronomic heritage. By exploring and disseminating knowledge about Ecuador's culinary diversity, academic works allow us to rediscover and value regional dishes that could be at risk of disappearing. These studies investigate the history and cultural context of food, connecting culinary practices with the customs and traditions of different communities. This work not only enriches the country's cultural heritage, but also fosters belonging and national identity.

Gastronomy is an important factor in the construction of the culture and identity of regions and countries, as it reflects the history, customs and natural resources of each place. Local ingredients, culinary techniques and traditional dishes are a living expression of cultural heritage, passed down from generation to generation. Through food, communities preserve their collective memory and strengthen a sense of belonging. In addition, gastronomy promotes the use of local products, which contributes to the local economy and environmental sustainability. Regional studies such as ⁽⁸⁾ highlight the importance of gastronomy in the Brazilian Amazon area, thanks to the diversity of its products and ingredients that form part of the regional identity. In the same way, the study of ⁽⁹⁾. Likewise, gastronomy as a regional intangible cultural heritage in Mexico has been characterized in the study of ⁽¹⁰⁾. In the local scenario, ⁽¹¹⁾ carried out an analysis on the relationship between gastronomic tourism, sustainable development and the benefits for host communities.

On the other hand, in the sense of Ecuadorian gastronomic identity, a gradual loss of it is observed, since in the new generations there is a devaluation of their own culinary representations. Globalization and the proliferation of new food cultures have affected local culinary practices, leading to a gradual loss of ancestral customs and recipes. Depending on economic, social and cultural factors, it can be pointed out that the accessibility and convenience of processed foods and fast food have, in many cases, displaced traditional cuisine in the daily life of families. This change is driven by increasing urbanization and fast-paced modern living, which reduces the time spent preparing traditional meals. This may be due to the influence of the media and advertising on the adoption of new eating habits, as they promote an image of modernity and status associated with the consumption of globalized products. However, this trend entails a significant loss of culinary and cultural heritage, as younger generations are less and less familiar with indigenous techniques and flavours. For this reason, it is necessary to promote activities to preserve the traditional culinary identity through education and the promotion of local cuisine. It is necessary that educational programs, in schools and in communities, should emphasize the importance of traditional culinary practices, as well as the use of local ingredients and the recovery of ancestral recipes, as a way of resisting the homogenizing pressures of globalization ⁽¹²⁾.

However, the value of gastronomic knowledge for the benefit of the population deserves an analysis from its cultural contribution, which is present in the nationalities of the Ecuadorian territory. In this way ⁽¹³⁾ he states:

The gastronomic richness of the different nationalities and peoples of the country is characterized by the use of the diversity of regional products and their nutritional value. These products are still largely organic; that is, they are grown without the use of chemicals that affect people's health. (p. 14)

It is in this scenario that we can highlight publications that talk about the relationship between gastronomy, culture and intercultural communication. Food and culinary practices serve as bridges between different cultures, facilitating understanding and interaction between diverse communities. Gastronomy can be understood from an intercultural perspective, since it is not only a food practice, it is also a means of communication that reflects values, beliefs and cultural identities. Through food, people can share and learn about the traditions and customs of other groups, to promote mutual respect and appreciation. The importance of language in the transmission of gastronomic knowledge can be highlighted. Culinary terminology, recipes, and stories associated with food are essential components of culture that are passed down from generation to generation. Also, intercultural encounters can influence and transform gastronomic practices, giving rise to new forms of culinary expression that combine elements of different traditions. Gastronomy has been used as a tool for integration and intercultural dialogue in various contexts, from food festivals to educational programmes ⁽¹⁴⁾. The aforementioned work is analyzed by ⁽¹⁵⁾, where it is pointed out:

In short, gastronomy is, as stated in the introduction to the book, a meeting point *between cultures*, that is, a *supplement to culture* that influences the knowledge and/or learning of languages, also favouring the elimination of prejudices or intercultural barriers and facilitating dialogue, knowledge, global understanding and rapprochement between peoples. (p. 484)

On the other hand, gastronomy is part of the culinary heritage and cultural communication because in this phenomenon the cultural traditions and characteristics of a people are manifested, which contributes to the development of the localities. In this way, for people, the culinary experience that each region has through its cultural-gastronomic identity is present, which makes it a link of communication and cultural transmission. There is an intrinsic relationship between gastronomy and cultural heritage, highlighting how food and culinary practices reflect and preserve the cultural identity of a region. Gastronomy is an essential component of cultural landscapes, as it encapsulates the history, traditions, and social practices of communities. There are several cases in which gastronomy has been a key factor in the conservation of cultural heritage, both tangible and intangible. In this way, local products and traditional recipes represent a cultural legacy, have the potential to promote economic development and sustainable tourism. By valuing indigenous foods and ancestral culinary techniques, communities can attract visitors interested in authentic experiences, fostering an economy based on culture and sustainability. In this scenario, the importance of education and awareness in the preservation of culinary heritage is highlighted. It is necessary to include gastronomy in educational programs and promote initiatives that connect young people with their cultural roots through cooking. Policies that support local

agriculture and traditional food production would also be pertinent to conserve biocultural diversity. On the other hand, while modernization and change are inevitable, it is crucial to find a balance that allows for the evolution of culinary practices without losing sight of their cultural and heritage value ⁽¹⁶⁾.

In the same way, there are studies that document the contribution of gastronomy in the development of interculturality in school settings. Due to the growing diversity in the classrooms of Andalusia, one of the strategies to moderate social contrasts and promote intercultural scenarios is the use of gastronomy as an object in spaces of interaction with students and students. Gastronomy can be an effective educational tool to promote interculturality in the first years of education. Introducing children to culinary diversity not only expands their knowledge about different cultures, but also cultivates values of respect, tolerance, and understanding from an early age. There are a variety of practical strategies and activities that educators can implement in the classroom, such as preparing dishes from different cultures, holding school food festivals, and organizing cooking workshops with the participation of families. Through these activities, children learn about ingredients and recipes from other countries, discover the stories and traditions that accompany them, thus fostering a greater appreciation for cultural diversity. In addition, intercultural education in childhood is of great relevance, gastronomy can be a powerful means to achieve this goal, by exploring other cultures through food, at an early age one can develop social and emotional skills essential to live in a diverse society ⁽¹⁷⁾.

In the same vein, on gastronomy and interculturality from the perspective of Ecuadorians in the United States, ⁽¹⁸⁾ he talks about the advance of Ecuadorian culture in various states of the American Union and their interactions on various topics, including Ecuadorian dishes such as ceviche with Peruvians and with other nationalities of Latin America. These interactions have given rise to a multicultural cuisine, where dishes from all over the world coexist and are continuously reinvented. Specific examples of ethnic cuisines, such as Mexican, Chinese, Italian, Ecuadorian, and Peruvian, have been integrated into the American diet, while maintaining their cultural roots. The role of ethnic restaurants, food festivals and food markets as key spaces for intercultural interaction and culinary exchange is important. These places offer opportunities for immigrants to share their cultural heritage, they also allow native-born Americans to explore and appreciate the gastronomic diversity. In this way, gastronomy becomes a means for social inclusion and intercultural understanding. Through food, people can overcome cultural barriers and build meaningful connections.

Food and culinary practices are essential components of individual and collective identity, reflecting values, traditions and the history of communities. Globalization has transformed food cultures by introducing new ingredients and techniques, but it also creates tensions between the preservation of traditions and the adoption of external influences. In this way, food is influenced by the construction of social meanings and eating habits can serve as symbols of belonging or differentiation. Gastronomy is essential in the definition of cultural identity, in the contemporary world, food continues to be a field of negotiation and cultural expression. In this line ⁽¹⁹⁾ he points out:

In food we also find the space for the preparation and cooking of identity, and therefore it is a place where the dynamics of change in a culture are cooked. A reading of the universe of food opens the door to the study of cultural diversity, of the contemporaneity of cultures, and therefore of the permanent process of change. (p.106)

At the local level, the study carried out by ⁽²⁰⁾ can be documented, Ecuadorian cuisine has been a meeting point for Spanish cuisine, foreign cultures and the vernacular cuisine of the regions, which have provided aromas, textures and flavors. The analysis takes a tour of the gastronomic cultural identity of the province of Los Ríos.

ICT and video games for the transmission of knowledge

In this context, it is possible to document the contributions of technological applications in educational processes as learning tools, academic publications such as those of ⁽²¹⁾, highlight the relevance of cultural preservation and how augmented reality can make these traditional elements accessible to a wider audience, including new generations. The combination of modern technology with the cultural richness of the Shuar helps in the conservation of their heritage, it also increases interest and respect for this culture in the contemporary digital context.

In the same way, ICTs in the form of applications or Apps have collaborated with the learning of sign language, for the generation of inclusive environments. The use of mobile applications to teach sign language to children without disabilities is an initiative that promotes the social inclusion of people with hearing loss, and raises awareness among hearing children about communicative diversity. Mobile applications can be effective and accessible tools for learning sign language, through interactive activities that facilitate the acquisition of these skills. In addition, there are considerable benefits of creating inclusive social environments where all children, regardless of their hearing abilities, can communicate and interact ⁽²²⁾.

⁽²³⁾ show the usefulness of digital technological resources in learning content for the training of professional drivers. Information and Communication Technologies (ICT) in the training of professional drivers in Pelileo, Ecuador. The authors argue that ICT can significantly improve the quality of training, providing interactive tools that facilitate practical and theoretical learning. The implementation of a diagnostic research on the contents of

Basic Vehicle Maintenance is highlighted, through the use of ICT, the understanding of vehicle maintenance concepts is improved through an APP with multimedia and audiovisual content for the learning of professional drivers in training. In addition, the article underlines the importance of integrating these technologies into driver education as a means of updating traditional teaching methods, adapting them to needs, basic automotive knowledge and road safety requirements.

ICTs in the form of mobile applications (Apps) can be of great help in community tourism by facilitating the direct connection between tourists and local communities. These tools allow travelers to easily access information about destinations, cultural activities, and services offered by communities, which promotes more authentic and sustainable tourism. This improves the tourist experience, as well as benefits local communities by increasing their visibility and access to global markets, without costly intermediaries. In addition, Apps can include educational functionalities, informing tourists about local history, culture and customs, fostering deeper respect and understanding ⁽²⁴⁾

In the area of culinary knowledge and ICT ⁽²⁵⁾ they developed a study focused on the development and implementation of an application designed to highlight the culinary richness of the central region of the Ecuadorian Andes, seeking to connect tourists with local gastronomic experiences more efficiently. In this way, they argue that new technologies, particularly mobile applications, have revolutionized the way tourists plan and enjoy their trips. The application proposed in the study not only offers information about restaurants and typical dishes, but also integrates interactive functions such as geolocation, reviews from other users, and personalized recommendations based on user preferences. It highlights how this tool can contribute to local economic development by attracting more tourists interested in gastronomy, a growing sector within tourism. In addition, it is mentioned that the application can help preserve and promote cultural identity through food, while improving the tourist's experience by offering an accessible and personalized guide. In this way, mobile applications represent a valuable opportunity to strengthen gastronomic tourism, facilitate access to the local culinary offer and create a connection between visitors and the culture of the destination. This digital approach is essential to adapt tourism to contemporary trends and the expectations of modern travelers.

Along these lines, university institutions have worked on video game projects with educational and cultural approaches ⁽²⁶⁾. On the other hand, under the knowledge and contribution of technology in the dissemination of knowledge, the usefulness of video games as tools for education ^{by (27)}, for learning ^{by (28)}, in the dissemination and teaching of cultural content ^{has been documented (29)}

METHODOLOGY

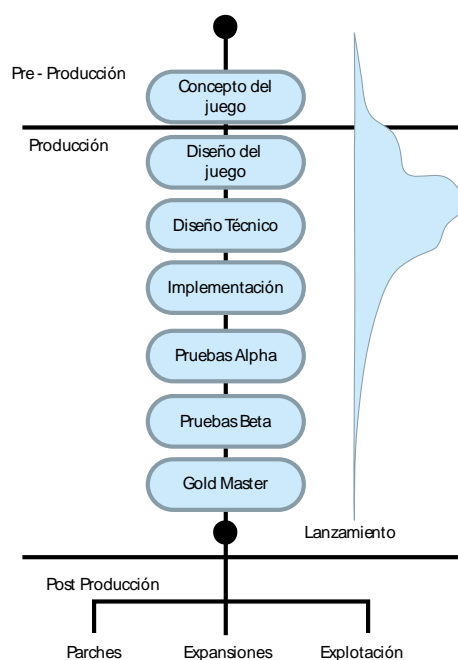
An exploratory type of research was used, which according to ⁽³⁰⁾ is to have a clear objective to investigate and analyze specific information so that in the future a more detailed investigation can be done. Based on documentary research on gastronomy and interculturality, an intervention project has been developed, which integrated the knowledge of the preparation of typical dishes of Ecuadorian gastronomy with ICT Information and Communication Technologies, in the form of an APP of a video game. Through a beta version of an educational video game, which is set in scenarios typical of the city, the user or player uses a guinea pig (guinea pig, guinea pig, etc.) as an avatar. In this way, the user using the guinea pig is integrated into the video game, as it is essential for the gastronomy of the region. The mechanics are simple and the gameplay is linear, where the player must go through the level looking for and collecting the ingredients of the typical dish of the level to see the graphic with gastronomic information at the end.

The beta version of the video game was tested using a quantitative approach, which used a group of 90 individuals, students from 9 to 14 years of basic education, at the Jose María Roman Educational Unit in the city of Riobamba. The sample was determined using the criterion of probabilistic sampling by cluster or clusters ⁽³¹⁾.

App Development

The development of the intercultural educational video game with a gastronomic theme followed the scheme presented by ⁽³²⁾:

Image 1. Production phases of a Video Game. In original language Spanish



Source: Manrubia (2014, p. 794)

Pre-production, concept and game design

The idea and premise of the game is based on the need to transmit knowledge of the local gastronomic culture. In this way, it begins with the sketches of characters that will give mechanics to the game and scenarios where the mechanics will be located.

Image 2. Game avatar sketches



Source: Own elaboration

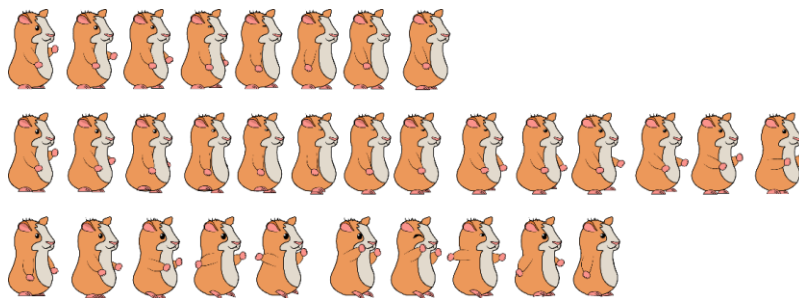
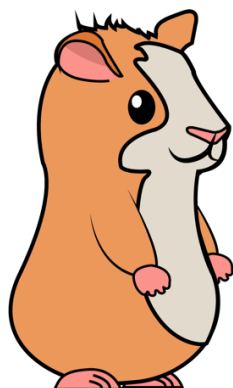
Image 3. Sketches of the scenarios and objects of the video game



Source: Own elaboration

The final graphics were digitized and placed in the game's programming software. In this case the avatar, the scenarios and the mechanics.

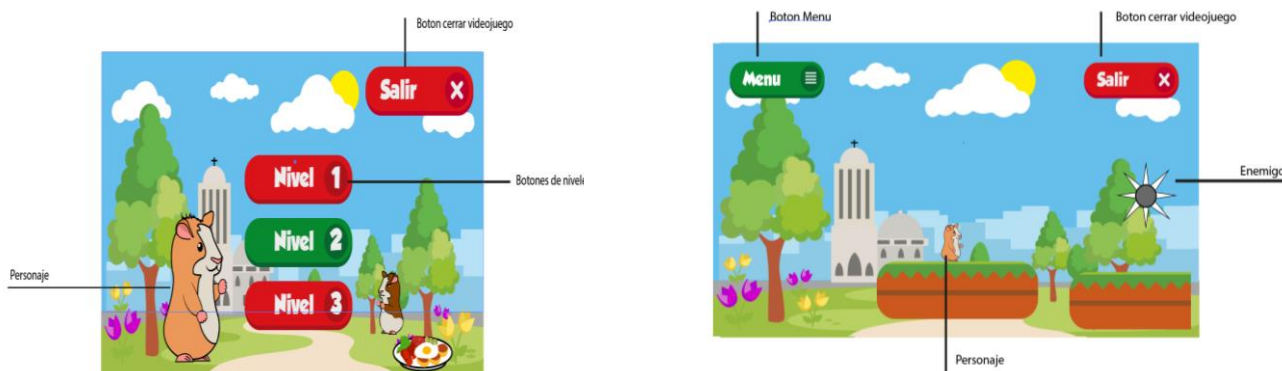
Image 4. Player Avatar and Motion Sprites



Source: Own elaboration

The user interaction screens and game mechanics are presented in Figure 5.

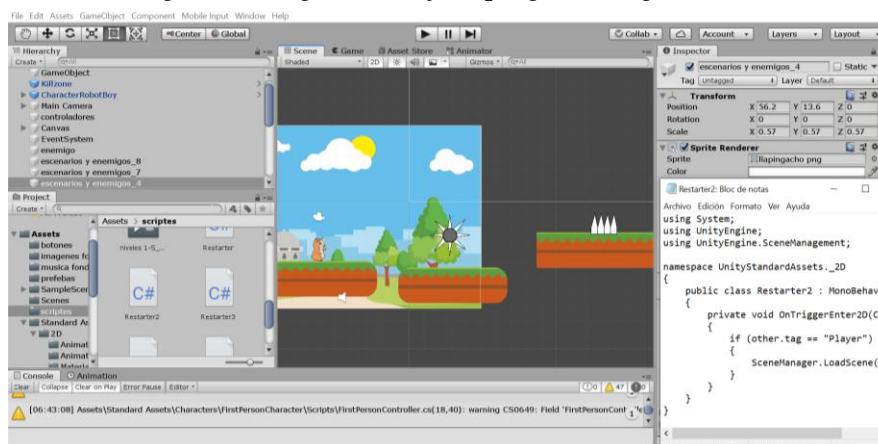
Image 5. Video game interface screens.



Source: Own elaboration

The programming of the mechanics was done in the UNITY video game engine. This allowed the ideas of the video game to be captured.

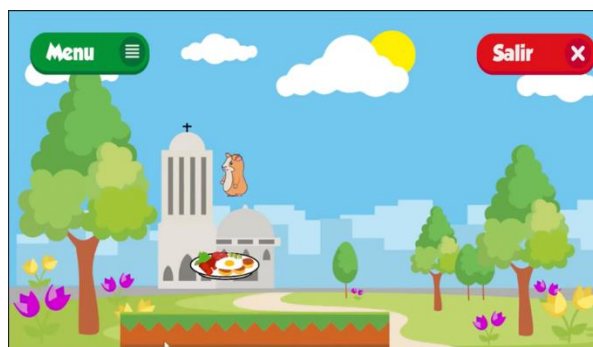
Image 6. Video game interface programming in UNITY.



Source: Own elaboration

After usability tests, and the versatility of the video game's interface, its executable format is compiled to carry out beta tests.

Image 7. Gastronomic video game interface



Source: Own elaboration

RESULTS

Within the methodology section, the method of carrying out beta tests was explained. After the test of the video game by the cluster or sample cluster of early education students, they were asked to answer a survey with questions regarding the interface, gameplay and predisposition to use the video game. In this way, the results described in Table 1 were obtained.

Board 1. Post-beta test survey results

N	Question	Frequency		Percentage (%)		Interpretation
		Yes	No	Yes	NO	
1	Is the character enjoyable to play the app?	90	0	100	0	All the individuals in the cluster responded positively to the taste of the video game
2	Are the scenarios interesting for the video game?	78	12	87	13	A percentage higher than 85% of those surveyed indicated that the scenarios and backgrounds of the game were suitable.
3	Were you able to learn what are the ingredients of the typical dish presented in the game?	90	0	100	0	The learning of the gastronomic content was assimilated by the entire statistical sample.
4	Was the video game difficult to play and advance in the level?	0	90	100	0	Regarding gameplay, 100% of the sample stated that they had no difficulty in using the video game.
5	If the game has more levels, would you still play the game?	90	0	100	0	The predisposition to continue with the game was 100%

Source: Own elaboration

DISCUSSION

Through beta testing of the video game, it was possible to evidence the usefulness and effectiveness of ICTs, in this case video games, in the teaching-learning processes. This supports what is written by ⁽²⁷⁾ and ⁽²⁸⁾.

Regarding gastronomic content as a support for interculturality, the learning obtained from culinary content by the application group shows that gastronomic knowledge through ICT can promote intercultural scenarios in basic education students. This is in accordance with what was written in the publication of ⁽²⁹⁾.

Likewise, the students showed great interest in the contents, characters and scenarios of the gastronomic video game, in this way the knowledge present in the application is a beginning for learning and knowledge of what refers to their cultural heritage as mentioned by ⁽¹⁰⁾.

CONCLUSIONS

Video games have been considered since their creation as objects of entertainment and leisure. However, several studies demonstrate its usefulness for learning educational content. In the case of this study, the usefulness of video games for learning gastronomic knowledge, typical dishes, ingredients, etymology of names and other content can be demonstrated.

In the same way, the gastronomy of the regions, cities and towns is part of their cultural expressions. The scenarios of interculturality are developed through the exchange of knowledge of the peoples, in this context, Ecuadorian gastronomy is nourished by ingredients, processes and knowledge of different cultures that coexist harmoniously within their culinary expressions. ICTs, in this case the gastronomic video game, show that cultural knowledge can be obtained from an early age in a playful way, which contributes to the construction of interculturality in Ecuador.

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