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Director: Fernando Emilio Valladares Fuente

Email: fernando.valladares@upr.edu.cu

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Original article

The game as a facilitator of knowledge of environmental legislation

El juego como facilitador del conocimiento de la legislación ambiental

Jogar como um facilitador do conhecimento do direito ambiental

Amílcar Abel Cabrera Núñez^{1*}  <https://orcid.org/0000-0003-0339-452X>

Yousdey Villafáfila Madera¹  <https://orcid.org/0000-0003-4869-2395>

Lillanys Valdés Madera²  <https://orcid.org/0000-0002-3517-9587>

Noraida Jiménez Dávila¹  <https://orcid.org/0000-0002-5996-2066>

¹University of Pinar del Río "Hermanos Saiz Montes de Oca". Pinar del Río, Cuba.

²Environmental Research and Services Center, ECOVIDA. Pinar del Río, Cuba.

*Corresponding author: amilcar.abel@upr.edu.cu

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ABSTRACT

Introduction: The work addressed the importance of the use of recreational games in environmental education activities as a resource to contribute to the knowledge of environmental legal norms in the San Vicente Popular Council, belonging to the Viñales National Park.

Objective: The objective of the work was to demonstrate the use of recreational games in environmental education activities to contribute to the promotion and learning of the environmental legal norms applicable to the Community, to face existing environmental problems.

Materials and methods: Theoretical methods such as: analysis-synthesis, historical-logical, induction-deduction were used, which allowed: making generalizations regarding the theoretical positions and reaching conclusions, studying and specifying the qualities of recreational games. The semi-standardized interview was used in the same way to diagnose the use of the games by specialists in the community.

Results: The work allowed to ratify the effectiveness of linking the recreational game in environmental education activities as a way to contribute to the necessary knowledge about environmental legislation in a community.

Conclusions: The implementation of the game allowed linking the community with existing environmental problems and their possible solution, by increasing knowledge through these activities of both environmental education and environmental legislation.

Keywords: Recreational play; Environmental education activities; Community.

RESUMEN

Introducción: El trabajo abordó la importancia de la utilización del juego recreativo en las actividades de educación ambiental como recurso para contribuir al conocimiento de las normas jurídicas ambientales en el Consejo Popular San Vicente, perteneciente al Parque Nacional Viñales.

Objetivo: El objetivo del trabajo consistió en demostrar la utilización de los juegos recreativos en las actividades de educación ambiental para contribuir al fomento y aprendizaje de las normas jurídicas ambientales aplicables a la comunidad, para enfrentar los problemas ambientales existentes.

Materiales y métodos: Se utilizaron métodos teóricos tales como: análisis-síntesis, histórico-lógico, inducción-deducción los cuales permitieron: realizar generalizaciones con respecto a las posiciones teóricas y arribar a conclusiones, estudiar y particularizar las cualidades de los juegos recreativos. Se utilizó de igual forma la entrevista semi estandarizada para realizar el diagnóstico de la utilización de los juegos por parte de los especialistas en la comunidad.

Resultados: El trabajo permitió ratificar la efectividad de vincular el juego recreativo en las actividades de educación ambiental como vía para contribuir al conocimiento necesario sobre la legislación ambiental en una comunidad.

Conclusiones: La implementación del juego permitió vincular a la comunidad con los problemas ambientales existentes y su posible solución, al incrementar el conocimiento mediante estas actividades tanto de la educación ambiental como de la legislación ambiental.

Palabras clave: Juego recreativo; Actividades de educación ambiental; Comunidad.



RESUMO

Introdução: O trabalho abordou a importância do uso de jogos recreativos em atividades de educação ambiental como um recurso para contribuir com o conhecimento das normas legais ambientais no Conselho Popular de San Vicente, pertencente ao Parque Nacional Viñales.

Objetivo: O objetivo do estudo foi demonstrar o uso de jogos recreativos em atividades de educação ambiental para contribuir para a promoção e aprendizagem de normas legais ambientais aplicáveis à comunidade, a fim de enfrentar os problemas ambientais existentes.

Materiais e métodos: Foram utilizados métodos teóricos como: análise-síntese, histórico-lógica, indução-dedução, que permitiram generalizações com respeito às posições teóricas e conclusões a serem alcançadas, e as qualidades dos jogos recreativos a serem estudadas e particularizadas. Uma entrevista semi-padronizada também foi utilizada para diagnosticar o uso de jogos por especialistas da comunidade.

Resultados: O trabalho nos permitiu ratificar a eficácia da associação de jogos recreativos em atividades de educação ambiental como forma de contribuir para o conhecimento necessário sobre a legislação ambiental em uma comunidade.

Conclusões: A implementação do jogo tornou possível ligar a comunidade aos problemas ambientais existentes e sua possível solução, aumentando o conhecimento através destas atividades tanto da educação ambiental quanto da legislação ambiental.

Palavras-chave: Jogo recreativo; Atividades de educação ambiental; Comunidade

INTRODUCTION

At present, the environmental issue has gained in importance on a global scale, due to the real danger of the possible destruction of the planet, not only because climate change is a reality, but also because of the lack of respect for the environmental measures necessary to reverse this phenomenon by part of the most economically developed countries. In addition, mercantilism prevails over environmental needs, and the constant manifestation of war conflicts on a global scale provoked by hegemonic powers in their eagerness to guarantee their interests, generate an irremediable threat to life on the planet.

In this regard, the *Magna Carta of the Republic of Cuba* includes within its articles that the State exercises sovereignty and jurisdiction: a) over the environment and natural resources of the country; b) on the natural resources, both living and non-living, of the bed and the waters superjacent to it, and the subsoil of the sea of the exclusive economic zone of the Republic, to the extent established by law, in accordance with the Law International, and c) on the continental shelf to the extent established by law and in accordance with International Law (*Constitution of the Republic of Cuba, 2019*).

Since ancient times, playing and having fun are essential attitudes for mental, physical and intellectual health. Through them, the child begins to develop language, socialization, thought, self-esteem and initiative, preparing him/herself to be a human being with the capacity to face obstacles and participate in the construction and organization of the space in which he lives (*Mariotti Putton, 2021*).



The concern of the sciences - the exact, the natural and the social - to study and solve the serious dilemma of the environment that humanity faces today, in terms of safeguarding the socio-natural environment, forces us to seriously address this issue not only in the multidisciplinary but also in the transdisciplinary.

For this reason, any study that implies the protection of the conservation of biological diversity must be carried out by convening the sciences that are most involved with the specific subject in question, so it is not surprising that with sociological, legal or political are combined geographical, geological, chemical and/or biological aspects; depending on the conservation of biological diversity (Caraballo, 2017).

Article 16 of the Constitution itself states: The Republic of Cuba bases international relations on the exercise of its sovereignty and anti-imperialist and internationalist principles, based on the interests of the people and, consequently: f) Promotes the protection and conservation of the environment and the confrontation with climate change, which threatens the survival of the human species, based on the recognition of common but differentiated responsibilities; the establishment of a fair and equitable international economic order and the eradication of irrational patterns of production and consumption (Constitution of the Republic of Cuba, 2019).

The community under study, regardless of the conglomerate of environmental regulations of a general nature that is applicable to it, has specific legislation that expressly regulates life in this place, around the relationship that occurs there between the natural environment and the built. In this sense, *Decree Law No. 201 of December 23, 1999 of the National System of Protected Areas governs*, which includes the regulations of the exercise of its rectory, control and administration, the categories of protected areas, their proposal and declaration, the protection regime and the granting of authorizations to carry out activities in said areas.

In the aforementioned community, social behaviors are appreciated that favor the application of cultural, social and economic policies without taking into account the *environmental impact*, which favors certain abusive forms of exploitation of natural resources, which negatively influence the conservation of the environment and that contravene what is included in environmental legislation, which generates ignorance of the applicable legal norms by its members, and therefore, contributes to the existence of unlawful conduct.

The research topic has been previously addressed by other authors, but it does not show an antecedent of having been used in the theme related to environmental legislation, rather the games have been used for environmental education.

The didactic game is a way that allows to use the imagination and reinforce the creative power of the inhabitants of the community, therefore, it is one of the safest means to develop imagination, reflection, sensitivity and social sense in the free development of their body and spirit, an action that is directly articulated with the environmental education activities that are proposed in the environmental legal program to be developed in the aforementioned Community.

In this same context, it is undeniable that from its conception the game represents a teaching method, the truth is that, in the reality of its daily practice, this pedagogical activity is subject to the flexibility or inflexibility of the work plans, in such a way that so that this greatly reduces the accumulation of experiences and the use of signs that can be generated (Herrera, 2020).



The didactic considers the game as entertainment that promotes knowledge, at the same time that it produces satisfaction and thanks to it, you can enjoy a real rest after a long and hard day's work. In this sense, the game favors and stimulates moral qualities in boys and girls, such as: self-control, honesty, security, attention is focused on what they do, reflection, the search for alternatives to win, respect for the rules of the game, creativity, curiosity, imagination, initiative, common sense and solidarity with your friends, with your group, but above all fair play, that is, with all the cards on the table. Competitiveness is introduced in the search for learning, not to stimulate adversity or to ridicule the opponent, but as a stimulus for meaningful learning (Towers, 2002).

Those who educate have considered the game as a pedagogical tool that offers great benefits in the teaching-learning process and which they can make use of, especially at an early age; however, some scholars on the subject such as: Bodrova, (2003); Hakkarainen and Bredikyte (2008) state that the growing demand for quantifiable results on the academic performance of preschool boys and girls has caused play to be relegated to the periphery of the curriculum and to other settings. In this same context, Bergen (2002) and (Rivera, 2009) agree in pointing out a current trend in the preschool education system to preserve those actions aimed at the accumulation of knowledge, almost completely forgetting that at this age many infants are still starting the path of curiosity, imagination and creativity (Sánchez-Domínguez et al., 2020).

Through a pedagogical perspective, the game has value in itself by addressing different dimensions of the human being: the corporal, the emotional and the rational, thus allowing the stimulation of the different aspects related to learning, social adaptation, personal liberation and the possibility of making known and transforming the culture in which each subject is immersed (Tamayo, 2016).

The thoughts that are held about the forms of the teaching-learning processes in the communities are as varied as their resources; In this sense, the conceptions do not escape social affirmations such as the undervaluation of the game and playing in all stages of learning and fields of knowledge, conceiving this activity as a waste of energy without any meaning, or in school cases, a exclusive activity for boys and girls in the first years of life, undermining the value of play in the construction of knowledge, society and even culture.

In this regard, (Hiuzinga, 2000) states that the game is older than culture and this action has allowed people to build their culture; it is not simply a means for wear and tear or to pass the time, since "as such, it goes beyond the limits of purely biological or physical occupation, it is a function full of meaning".

In this sense, the game is formative, as long as it is based on the follow-up of instructions and developing skills and capacities, based on both the development and strengthening of values and norms (Mora, 2015).

Playing means a way of learning, not only fun, but also preparation for life (Benitez, 2009).

Intellectually through the game you get new experiences, being an opportunity to make successes and mistakes, to solve problems. It is an activity that stimulates the development of thought and creativity, explores and gets to know his environment and at the same time allows him to get to know himself, almost all intellectual behaviors, as (Piaget, 1990) they are likely to become a game as soon as they are repeated by pure assimilation (Rios, 2013).



In the educational context, conception is understood as the idea that people have regarding the teaching and learning processes (Vilanova, 2011).

While the objective of the research was to demonstrate the effectiveness of the use of recreational games as part of environmental education, in the promotion and learning of the environmental legislation applicable to the San Vicente Community, located in the Viñales National Park.

It is about advancing through environmental education in the search for and construction of a culture of sustainability, which implies the application of various methods and forms that favor the modification of relations with the biophysical environment, as well as changes in the cultural, social and economic patterns that have conditioned environmental problems. Consequently, the object of study of environmental education is environmental problems, and its objectives are aimed at raising awareness, training, designing, applying and evaluating alternatives with the participation of the different social sectors, based on promoting or strengthening values that they are essential to reverse the existing environmental situation in a given context (Márquez, 2021).

Sustainability-oriented education is of such importance in favor of the full realization of human rights, peace, the responsible exercise of local and global citizenship, gender equality, sustainable development and health. For which an adaptation of the contents of said education is required that favors the acquisition of the knowledge, capacities, values and attitudes that citizens need to live a fruitful life, adopt informed decisions and assume an active role, both in the both locally and globally, when confronting and solving environmental problems.

MATERIALS AND METHODS

The qualitative research was developed as part of the implementation of an environmental legal program to contribute to the conservation of the environment in the Community of San Vicente, belonging to the Viñales National Park.

It was determined that the type of sampling to be used was non-probabilistic, of an intentional type, through a selected sample of ten specialists who work in the San Vicente Community, belonging to the Viñales National Park, linked to Environmental Education and recreational activity. A confidence level of 95 % was assumed, which corresponds to a 5% error and a value of $Z_Q = 1.96$.

Several options were handled among which there were instruments that allowed us to obtain the necessary information and that was not found in the secondary sources, which were used to carry out the diagnosis, a non-standardized interview with the aforementioned specialists of the community, linked to recreation activity and teaching to know the level of use of the game in the environmental education activities that are carried out.

To carry out the specific diagnosis on the use of games based on environmental education and specifically on environmental legislation, it was worked with a sample that had the following composition (Table 1).



Table 1 - Composition of the Viñales National Park specialists linked to recreational activities

No	Nivel	Actividad a la que se vincula	Años de experiencia
1	Superior (Licenciado)	Actividad Recreativa	3
2	Superior (Mc.S)	Educación Ambiental	6
3	Superior (Licenciado)	Actividad Recreativa	8
4	Superior (Licenciado)	Actividad Recreativa	12
5	Superior (Licenciado)	Actividad Recreativa	10
6	Superior (Licenciado)	Educación Ambiental	8
7	Superior (Licenciado)	Educación Ambiental	4
8	Superior (Mc.S)	Educación Ambiental	5
9	Superior (Mc.S)	Educación Ambiental	7
10	Superior (Mc.S)	Educación Ambiental	11

Regarding the link with the specialty, the composition of the personnel with whom the diagnosis was made, behaved as follows (Figure 1).



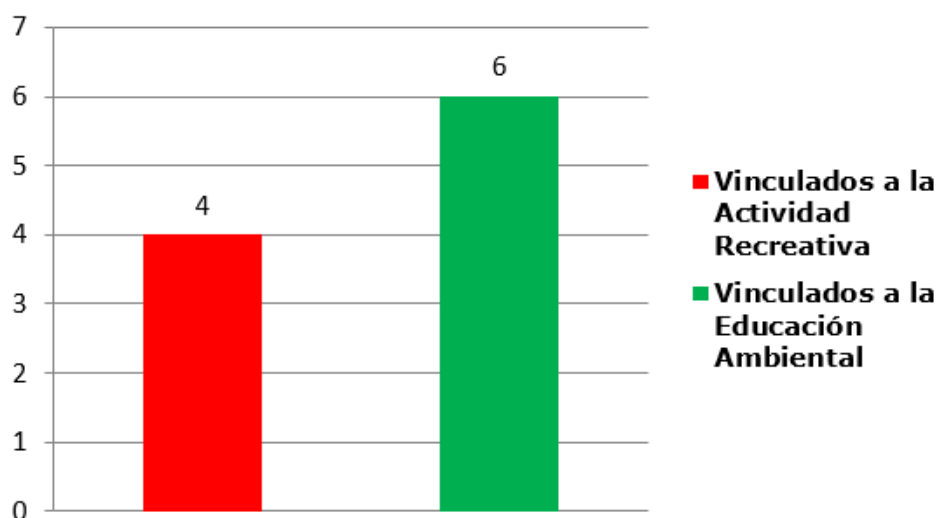


Fig. 1 - Specialties in which the sample used ventures

The empirical diagnostic methods used were the interview and the analysis of documents. The interview was conducted through a semi-structured guide aimed at knowing the use of the game as a means of teaching and within this if they are included in the same activities related to environmental legislation.

Regarding the review of documents, the study plans and class plans used by the specialists were studied, as well as the programs and activities planned in their exchange with the community.

RESULTS

Once the environmental diagnosis was made in the community where the methods and techniques applied allowed to identify the existence of serious environmental problems in this community, which affect and put at risk its environmental safety, the need to implement a legal education program was evidenced. to counteract the ignorance of the existing legislation and thus contribute to the protection of the environment.

Precisely within this program, activities were included in which the game was used as a way to increase knowledge of environmental legislation.

When carrying out the specific diagnosis with the community specialists on the use of games in order to support environmental education activities, the following results were evidenced

The interview

This technique allowed to verify that only 20 % of the interviewees include the game as an educational resource, 10% sometimes use it and 70 % do not include it in their daily activities (Figure 2).



Resultados de la entrevista

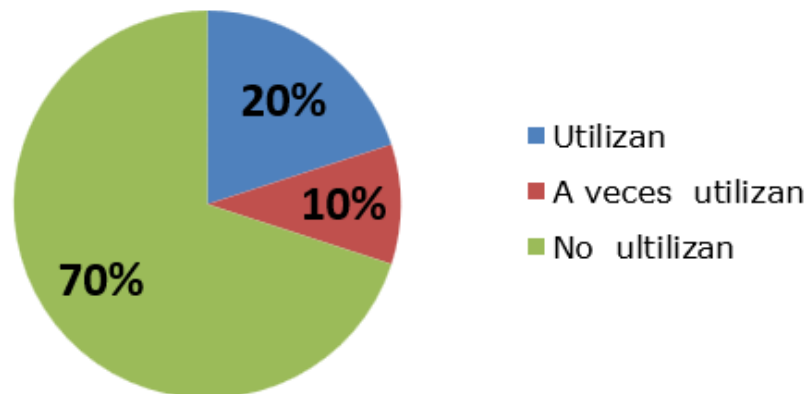


Fig. 2 - Use of games based on environmental education in the San Vicente Popular Council, Viñales National Park

Regarding the inclusion of legislative activities in the games used, the null appearance in them was verified, an element that favors the occurrence of actions that, regardless of being considered as environmental problems, violate environmental legislation (Figure 3).

Results of the interview on the link between games and environmental legislative activity

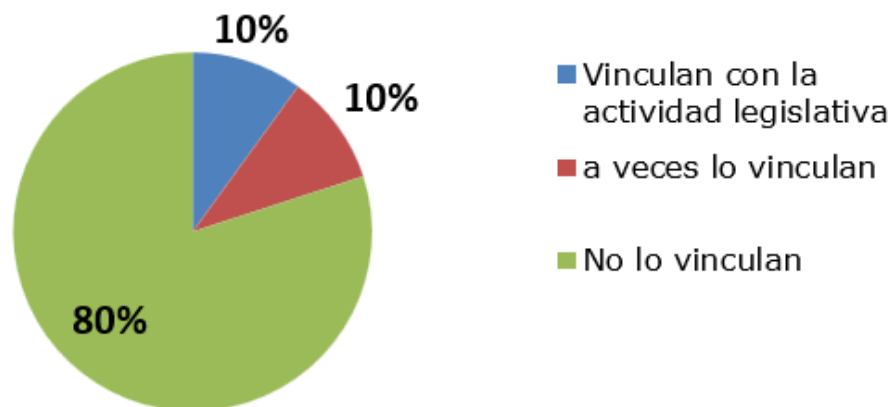


Fig. 3 - Use of games based on legislative activity in the San Vicente Popular Council, Viñales National Park



Document analysis

This method showed as a result that in the documents consulted (Study programs and lesson plans), the game is really included as a means of teaching by specialists, however, its content does not include elements that favor the knowledge of environmental legislation in none of the cases.

DISCUSSION

The use and development of games allow the inhabitants of the community to approach environmental problems and their possible solutions, promoting knowledge and the correct implementation of existing environmental legislation.

The result obtained in the execution and development of the planned games, which in turn are part of the Environmental Legal Education Program designed for the Viñales National Park San Vicente Popular Council, allowed the community to raise awareness of existing environmental regulations and It even contributed to the emergence of practical solutions for the environmental problems detected, achieving the link through the game of environmental problems and the legal norm that prevents said problem.

It is not known of previous research referring to the subject of the link between the game element and its direction towards the knowledge of environmental legislation, elements that make the research novel if the use of this teaching medium in the generation is taken into account of knowledge about the environmental legal norm.

According to (Tamayo, 2016) and with whom the authors agree "every game is playful, but everything playful is not a game", from a broad analysis it could be affirmed that the playful is presented as a category greater than the game, in where this is a manifestation of the playful. The ludic encompasses the playful, spontaneous of the human being, and is embedded in the DNA of people. The human being is a being that is sought in experience, but not in just any, but in one of happiness, tranquility, serenity and placidity. Ludic is a sensation, an attitude towards life that attracts, seduces and convinces in the intimate sense of wanting to participate, of being part of something to the point of forgetting one's own individuality.

Although it is true that the game has been perceived socially and culturally as an activity for children that fulfills only the objective of distracting, entertaining, or just to pass the time, in school contexts its potential has been recognized in terms of improving processes of teaching-learning, evidencing its contribution to the results. Without a doubt, the environment in which any subject develops affects their way of thinking, feeling and projecting themselves in the world. That is why people's perceptions are strongly influenced by the social environment, and in this way, actions begin to shape, in this case, the ways of teaching and learning; hence the importance of highlighting the game as a strong didactic resource that favors the achievement of the school's objectives, not only in academic results, but also in social results, since it allows improving relations between the community (Herrera, 2020).

The act of playing is good training for social skills and not just a ludic element. The game helps to develop expression and communication in a playful way, both verbal and gestural or corporal. Thus, while having fun, you are indirectly working on those personal



facets in which you have more difficulties. And let's not forget that communication is a necessary and essential element for coexistence with others (Álvarez, 2017).

The inclusion of games in the activities developed in the environmental legal program allowed to raise the perception of risk in the face of environmental problems in the community, on the other hand, it contributed to raising the knowledge about the environmental legislative system and the specific norms applicable to the People's Council. behaving as follows.

The purpose of the didactic game is to work on the transversal axes of environmental education, environmental legislation, environmental problems, development of thought, logical thought, in order to develop in the inhabitants of the community, the process of mental agility, based on experiences significant, that contribute to improve their development, to share and value the work done in terms of environmental conservation.

Specific objectives

- Establish ludic activities in which members of the community feel identified, and can deal with issues related to environmental problems and their solution through existing environmental legislation.
- Consolidate knowledge, abilities and skills regarding the environmental dimension
- Stimulate the cognitive part through activities that enrich their knowledge in the area of environmental legislation and also help stimulate the other areas of learning.

Area: Environmental education.

Transversal Axes: Environmental education, environmental legislation, environmental problems, development of thought, logical thinking.

Block of content: the game simulated as a whole the transit through a path with existing situations within the People's Council in which both environmental problems and environmental regulations are reflected.

Purpose: Develop in the inhabitants of the community cognitive processes that allow them to build knowledge, based on significant experiences to consolidate their logical skills, and that contribute to their development, ability to communicate and associate environmental problems with environmental legal norms.

How to play?

The staff was divided into two groups of 9 members each, to fulfil four recreational sports activities cumulative of points within which they will insert questions related to the environmental problems that were detected in the Community during the environmental diagnosis carried out and the possible solution of this with the different existing environmental regulations applicable to the National Park. Points were awarded for the different tests. The team that accumulated the most points was considered the winner of the game. Now, after the implementation of the different games in the community, during a period of three months, a survey similar to that of the diagnosis was carried out, an evident increase in the knowledge of the environmental legal norm was



perceived, since it rose from a 25 % to 93 % dominance by the inhabitants of the community on issues related to environmental legislation (Figure 4).

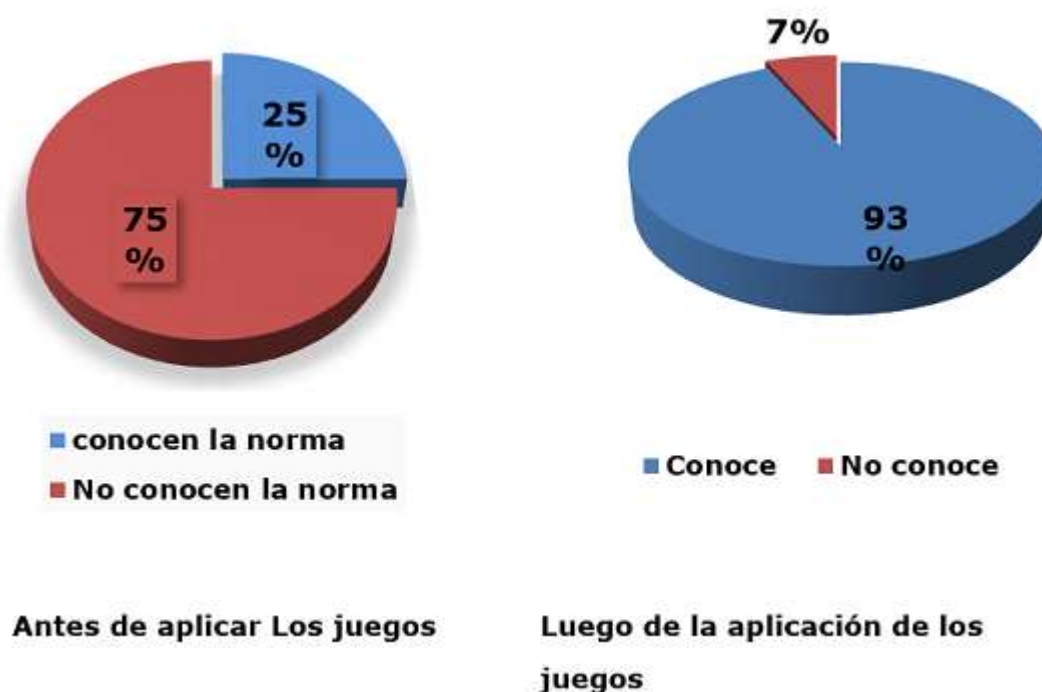


Fig 4. - Comparison of the results obtained after the application of the games

CONCLUSIONS

The implementation of the game allowed linking the community with existing environmental problems and their possible solution, by increasing knowledge through these activities of both environmental education and environmental legislation.

This type of actions foreseen in the environmental legal education program show the importance and effectiveness of the use of the use of this resource in terms of environmental conservation.

The results obtained demonstrate the positive contribution of the application of recreational games to the promotion and learning of the environmental legal norms applicable to the Community, showing a significant increase in the percentage of knowledge of the inhabitants in relation to the subject.

Similarly, they show the need to sensitize specialists in increasing the use and utilization of recreational games as a means to spread knowledge, in an enjoyable and healthy way, to the inhabitants of the community, achieving a positive impact on the protection environment.



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Conflict of interest statement:

The authors declare that there are no conflicts of interest.

Authorship contribution:

The authors have participated in the writing of the paper and analysis of the documents.



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