Reception: **June 8, 2017** | Acceptance: **October 2, 2018**

SUSTAINABLE AGRICULTURE FABLES FOR STUDENTS WITH INTELLECTUAL DISABILITY

—

Natacha Coca Bernal[1]
nlcoca@nauta.cu

Pablo Ángel Martínez Morales[2]
pmmorales@uclv.cu

Marieta Álvarez Insua[2]
mainsua@uclv.cu

1 Escuela Especial "Camilo Cienfuegos Gorriarán". Placetas, Villa Clara, Cuba.

2 Universidad Central "Marta Abreu" de Las Villas, Cuba

To quote this article:

Coca, N., Martínez, P. y Álvarez, M. (2019). Fábulas sobre agricultura sostenible para escolares con discapacidad intelectual. *Espacio I+D, Innovación más Desarrollo. VIII* (20), 8-30. doi: 10.31644/IMASD.20.2019.a01

— Abstract—

The present investigation facilitates elements on the creation and narration of fables for students with intellectual disability, it was applied in the school Camilo Cienfuegos Gorriarán located at the municipality of Placetas, Villa Clara, Cuba. The objective to build as a result of a participatory-action-research, a Book of fables for the formation of elementary notions of sustainable agriculture, for the students with intellectual disability. The social, psychological and pedagogic value was defined in the creation and narration of the fables; the moral dedicated to the conservation of the environment from the sustainable agriculture; the component game and the attention to the diversity. The methods used for the investigation were: analysis of documents, newspapers, informal groups of discussion, pedagogic tests and multiple-case study, applied during four years. The results that are obtained in the investigation evidence that the creation and narration of fables impacts favorably in the affected thought processes, in vocabulary, memory and spheres of the students' personality with intellectual disability and it forms the elementary notions of sustainable agriculture, as content of the Environmental Education.

Keywords

Fables; Sustainable agriculture; Environmental Education and students with intellectual disability.

There have been different denominations that have segregated and damaged people with intellectual disabilities among them: amnesia, mental weakness, mental deficiency, mental subnormality, oligophrenia, intellectual deficiency, mental defect, and mental retardation. These definitions have depended on the historical period and the development of the medical, psychological and pedagogical sciences.

People with intellectual disabilities need support, in such a way that they affect the different spheres of personality. Fables and literature in general is a means of teaching conducive to this end.

The most representative authors at the international level of the subject of schoolchildren with intellectual disabilities are: Díaz, Noell, & Rovira, (2018); García-García & López-Torrijo, (2016); García-Romero, (2016); García *et al*., (2009); López, Echeita, & Martín, (2009); Novell, Rueda, & L, (2002); Pallisera, Fullana, & Puyaltó, (2017); Schalock & Verdugo, (2009), (2016); Verdugo, (2002), (2005).

The researcher agrees with what Schalock and Verdugo said because it considers the 5 spheres of personality development of schoolchildren with intellectual disabilities:

> Intellectual disability is characterized by significant limitations in both intellectual functioning and adaptive behavior, which are expressed in conceptual, social and practical adaptation skills. The disability originates before the age of 18... its individual functioning results from the interaction of supports with the dimensions of Intellectual Skills, Adaptive Behavior, Participation, Interactions and Social Roles, Health and Context (Schalock & Verdugo, 2009).

Treatment of the contents related to Environmental Education for students with intellectual disabilities is governed by the objectives of the subjects included in the general curriculum; socio-educational activities, developed by the school, adjusted to the environment and the productive relationships that are carried out in it. Environmental Education is aimed at mastering the learning that allows schoolchildren with intellectual disabilities to function in natural and social environments, who can adapt to them without damaging it and do not receive the harmful effects of environments in return.

Within the environmental problem, which is diverse and extremely complex, the following themes are included: "climate change; disaster risk management; sustainable use of water resources; sustainable use of biological diversity; sustainable land management; fight against environmental pollution; safe handling of chemical products and hazardous waste; sustainable consumption and production; management of the coastal zone, law and citizen participation; protection of natural and cultural heritage; sustainable use of energy; environmental and ecological economy; watershed

management; environmental legislation; food security and social equity with lifestyles." (CITMA, 2017).

The present investigation focuses on the agrarian theme framed within the Environmental Education, for the importance that it has for the survival of the human species. In this sense, it is assumed as a definition of sustainable agriculture:

> Agriculture that seeks to reconcile the conservation of natural resources and the protection of the environment with the production of sufficient quantities of food to guarantee the well-being of present and future generations ... within sustainable practices is the management and use of land, techniques of cultivation to increase soil fertility, alternatives to fertilization, water use, integrated management of pests and crops (FAO, 2016).

The formation of elementary notions of sustainable agriculture is a socializing process through which schoolchildren with intellectual disabilities acquire new knowledge of the environment, it is the propitious vehicle to develop love of nature; the understanding of the importance of saving and efficient use of resources related to the agricultural process; instill in them the sense of belonging to their community and the search for solutions to their environmental problems, taking into account the benefits of sustainable agriculture, in this way contributing to prepare them for working life independently and therefore, for an adequate social inclusion.

The Special School "Camilo Cienfuegos Gorriarán" in the municipality of Placetas, Villa Clara, Cuba; hosts, in the first cycle, students with intellectual disabilities, in ages ranging from 6 to 10 years of age, with an enrollment of 110 students.

As a result of visits to classes; sampling of official documents; participation in system meetings at the center; exchanges with teacher or non-teacher workers, specialists, families and the community; as well as interacting with students with intellectual disabilities and visits to job training workshops to which they are linked, it was possible to confirm the knowledge and behavior of schoolchildren with intellectual disabilities regarding sustainable agriculture through the following facts:

- They do not perceive themselves as entities capable of transforming their environment and feeling part of it
- They cause damage to the plants consciously or unconsciously
- They do not know that agriculture is the sustenance of humanity
- They see it as hard work and not appropriate for them
- The agricultural work they perform is not sustainable
- They are influenced by the family to perform other jobs

- Use of renewable resources is insufficient, so that they do not degrade the environment
- The specialized literature on sustainable agriculture is written mostly by scientists for readers with a high IQ
- Teaching methods created by teachers do not reflect the agrarian theme
- Teachers do not carry out the inter-disciplinary agrarian theme with the prioritized subjects

The exposed situation, which is an expression of failures in the treatment of the contents of Environmental Education in the educational practice of the school, makes it possible to propose as a general objective to: build, as a result of a participatory action research, a Fables Book for the formation of elementary notions about sustainable agriculture, as a content of environmental education for students with intellectual disabilities.

METHODOLOGY

In the research, participatory-action-research techniques described in the research strategy of Kemmis were used, which is based on the "notion of a self-reflection spiral of cycles of planning, action, observation and reflection. Expresses a commitment to perfecting the practices and is collaborative." (1988)

The analysis of documents was applied to assess aspects of the content of the programs, methodological guidelines, curricular adaptations of Special Education, psycho-pedagogical records, lesson plans; as well as the existing bibliography of the subject of environmental education and sustainable agriculture necessary for the construction of the proposed Fables Book.

The researcher's diary was used to collect qualitative research data, tastes, motivations and interests. The construction process of the Fables Book was recorded in chronological order. As well as the progress of school children with intellectual disabilities, their imagination and creativity in the formation of elementary notions of sustainable agriculture as content of environmental education.

Informal discussion groups allow the collection of qualitative data related to the construction of the Fables Book; methodologically train teachers in the narration of fables; link them affectively with the objectives, missions and actions proposed taking into account their experience in teaching, to then determine the weaknesses, strengths of the Fables Book and give suggestions.

A pedagogical test was applied to verify the dominance that first grade schoolchildren with intellectual disability possess, in terms of the essential features of the formation of elementary notions of sustainable agriculture.

They were applied in each of the proposed agrarian subsystems. They were recorded on video with a hyperlink to the researcher's diary. The pedagogical tests registered the imagination and the creativity of the students with intellectual disability in the formation of each elementary notion with the use of puzzles, word search, order of sheets, and excluded term.

The multiple case study allowed to evaluate the internal expression of the scholar, from a totality of factors, both in time and space, with the participation of the different educational agents who carried it out. It was applied during 4 years, 2014-2018, and the Fables Book was also validated for the training of elementary notions of sustainable agriculture.

DEVELOPMENT

Setting description

The place of research is the school "Camilo Cienfuegos Gorriarán", where students with intellectual disabilities between the ages of 6 and 17 attend, located in the municipality of Placetas, Villa Clara, Cuba; and it can be found in the 2nd North street between the 2nd and 3rd East. The school is a house of the neocolonial period with large rooms and windows; it has an interior patio of 75 m2 suitable for the activities of the garden and the creation of the Fables Book.

First-cycle students with intellectual disabilities are between the ages of 6 and 12, 98% live in the urban area and do not have previous knowledge of agriculture. Of a population of 29 schoolchildren with intellectual disabilities, they have conditions that aggravate the diagnosis; 1 psychiatric disorder representing 5%, epilepsy 3 (15%); 2 cardiac patients (10%). On the oral level, 5 with language delay (25%). On the affective level 1 behavioral disorder, (5%). In the family environment the great majority of households are dysfunctional: 7 inmate parents, (35%); 2 alcoholics, (10%); 10 without any employment, (50%).

There are 18 teachers who cater for first grade students with intellectual disabilities, classified as: teachers (5), specialists (6) and pedagogical assistants (7), only 10% are graduates with a Special Education Degree. The specialists are: Speech therapist, Psychopedagogue, Professor of Physical Education, Professor of computer science, Librarian and Nurse.

The author assumes the phases and stages declared by Rodríguez Gil (et al: 1996): preparatory, field work, analytical, and informative because they are the most propitious to approach the study of the object, given its nature; the characteristics and particularities of the subjects that have served to develop the research for the conformation of the main results; the background in studies of this type and the possibilities of the empirical methods used.

PREPARATORY PHASE OF THE RESEARCH

Data gathering

A pedagogical test was designed in correspondence with each of the grades. The way of applying, stimulated the logical processes of thought with: games, puzzles and word search that were part of the test.

Diagnosis: allowed to determine the potentialities and needs in school children with intellectual disabilities as the following:

Potentialities

- The motivational affective sphere of schoolchildren with intellectual disabilities
- The motivation of school children with intellectual disabilities due to the use of teaching aids
- Willingness of schoolchildren with intellectual disabilities
- Imagination and creativity of school children with intellectual disabilities in these ages

Needs:

- Failure in the identification of the parts of the plant
- Failure in the characterization, utility and function of plant structures
- School children with intellectual disabilities do not identify agricultural work or its importance

Design stage

In this stage, the needs and units of analysis emanating from the pedagogical practice were consulted in the existing bibliography for its possible solution and construction of the Fables Book for the formation of elementary notions of sustainable agriculture. The theme of fables in students with intellectual disabilities has been insufficiently addressed.

Through the fable the laws of psychic development are reflected (Vigotsky, L. S .: 1972). According to the fundamental law of development to each period of the individual corresponds a particular form of social relations and in turn to each period corresponds a particular creation and narration of the fable, different, that meets their needs tastes and interests. These demands of the activity must be manifested in the fable or it would cease to be striking.

The creation and narration of the fables in the activities allows the teacher to appropriate the scholar with intellectual disability from social experiences. The fable as a teaching medium facilitates the motivation of external stimuli that are given to the scholar. The social experiences provided by this way facilitate the psychic development of school children and positively influence the development of their personality. "The child, during his growth... goes through a phase in which the fables serve him mostly as symbols. It is the phase in which the symbolic functions of language and play are instituted to become components of the personality" (Rodari, 2010).

The fable is a social mediator, in turn is an instrument, a teaching medium, with a psychological and semiotic load created by man with the aim of transmitting historical-social experiences to those around them. The teaching-learning process allows the development of personality. The use of the fable with simple dramatizations makes it possible to create positive experiences in schoolchildren with intellectual disabilities, to reveal meanings through the elementary notions of sustainable agriculture. Access to manifest moods and emphasize positive experiences. "The fable has as its purpose the clear and alive knowledge of a moral rule... it provokes experiences that are characteristic of the tragedy... a sensitivity is organized and directed to understand the words" (Vigotsky, L. S., 2008).

Different authors make reference to the importance of art and specifically of literature for the teaching-learning process such as Blanco & González, (2015); Craft, (2013); Dopico, García-Vázquez, Alonso, & Vázquez, (2015); Montañés, (2001); Salas, Dario, & Fernández, (2007).

The use of the fable, enhances the development of creative skills before different trades, based on the aesthetic and artistic taste of schoolchildren. "It is a didactic resource for training, in order that they include it in their classes and thus favor a learning of science from an innovative point of view" (Blanco & González, 2015).

The formation of elementary notions in the teaching-learning process promotes social inclusion, the rules of social coexistence, job training and responsible behavior towards natural resources.

The researcher joins Álvarez in that the goal of the teaching-learning process is "to prepare man for life. That is to say, the society proposes to the school, as a function, the formation of a graduate who meets certain qualities that allow him to face a set of situations, which are modified by the action of the same graduate, relying on the sciences or branches of the knowledge that he has dominated in this process" (Álvarez, 1999).

The teaching-learning process of schoolchildren with intellectual disabilities has the social mandate to prepare them for life, to equip them with the knowledge, skills, principles, values and qualities that enable them to take care of themselves, when they reach independent adult life. They

are offered in the teaching-learning process the supports, resources, multi-disciplinary interventions, the possibility of correcting and compensating their needs, influencing their potential so that they have a profitable life.

The formation of elementary notions of sustainable agriculture is achieved with the mastery of teachers of the diagnosis of school children with intellectual disabilities, their tastes, motivations and interests; without expecting homogeneous answers with a culture of equal opportunities for all. By understanding that each teaching-learning process is unique and that each situation requires the integration of different human groups. Giving to those who need it, to maximize their resources, autonomy, independence and creativity.

Students with intellectual disabilities show different degrees of commitment in the intellectual and emotional volitional sphere, which requires comprehensive educational attention. Strategies are drawn up that make the most of educational potentials, which allow them to face with greater success the social and personal demands that are presented to them throughout their lives.

The researcher joins the author (Guerra *et al* .: 2010) since the peculiarity that could be highlighted in the teaching-learning process of schoolchildren with intellectual disabilities would be the use and creation of different teaching methods, the diversification of the different forms of organization of the class so that they satisfy the same objective thought in the diversity of the classroom; as well as how to evaluate is determined by the characteristics of each student so that they enhance their creativity and compensate their needs.

> The educational process in schoolchildren diagnosed with mental retardation occurs under the same laws and principles that are evident with other students, although they acquire certain peculiarities, which is expressed in the classification of the content of teaching, the selection of methods that contribute to the development of the school, the variety of activities and the specificity of certain teaching media, incorporating at all times the corrective-compensatory and developer dimension, which is essential to evaluate the quality of educational work, constituting a condition and result of the work in the special school (S. Guerra *et al*, 2010)

Fables are a means of teaching conducive to the formation of elementary notions of sustainable agriculture; they can be used as long as the program and the instructional objective allow it, with which, in addition, attention to diversity is facilitated.

There are four aspects that identify the fables as a literary construction: brevity with an abrupt ending; characters represented mostly by animals with a marked psychological nuance; it contains a moral. The fourth aspect

of the fable is the narration, this literary work comes alive when it is narrated. "The fable contains a germ of lyric, epic and drama ... the characters of the fables are the same prototypes of the epic and dramatic characters, the unusual choice of characters, are preferably treated animals, sometimes introducing inanimate objects and very rarely people; this is done to elicit surprise" (Vygotsky, LS, 2008).

FABLES CHARACTERS FOR THE FORMATION OF ELEMENTARY NOTIONS OF SUSTAINABLE AGRICULTURE IN SCHOOLCHILDREN WITH INTELLECTUAL DISABILITIES

Forage intake, kg

The selection of the characters of the fables has an important weight in its creation, they were detected by the different methods and research techniques; the needs, tastes, motivations and interests of schoolchildren with intellectual disabilities regarding the subject of sustainable agriculture to build the characters.

The fables are located in imaginary territories located in the Sierra Maestra, Nipe-Sagua-Baracoa, La Ciénaga de Zapata and Viñales. Because these areas have a high percentage of endemism in flora and fauna, "40 and 60% of insects, 90% in molluscs, 36% in freshwater fish, 78% of reptiles, 6% in birds and 13% of mammals." (González, AR 2008).

The characters of the fables are the following:

The cork tree (*Microcycas calocoma*); the royal palm (*Roystonea regia O. F. Cook*); the cedar of Cuba, (*Cedrela odorata L*); Mahogany from Cuba (*Swietnia mahogani (L.) Jacq*); the pine of Cuba (*Pinus cubensis Griseb*).

The scorpion (*Heteronebo bermudezi bermudezi*); the spider (*Barronopsis arturoi*); the ladybugs or parrots (*Coleomegilla cubensis*) and the bee (*apis mellifera*) that is not endemic.

The pearl crocodile (*Crocodylus rhombifer*); the lizard (*Anolis quadriocellifer*); the iguana (*Cyclura nubila*); the bayoya (*Leiocephalus stictigaster*); the ant (*Leptothorax barroi*); elmajá bobo (*Tropidophis melanurus*).

The parrot (*Amazona leucocephala*); the zunzuncito (*Mellisuga elenae*); the tocororo (*Trogon temnurus*); the carpenter bird (*Colaptes fernandinae*); the negrito (*Melopyrrha nigra*); the goatherd (*Spindalis zena*); the chillin (*Teretistris fernandinae*); the bijiritas (*dendroica*); the partridge pigeon (*Starnoenas cyanocephala*); catey (*Aratinga euops*); the long-tailed hawk (*Accipiter gundlachi*); the crane (*Grus canadensis*); Sijú platanero (*Glaucidium siju*) and cartacuba (*Todus multicolor*).

The jutía conga (*Capromys pilorides*); the jutía carabalí (*Mysateles prehensilis*); the almiquí, (*Solenodon cubanus*); the fishing bat (*Noctilio*

leporinus); the white-tailed deer (*Odocoileus virginianus*). Invasive and domestic animal cat and rabbit.

The frog (*Eleutherodactylus limbatus*); the hawksbill (*Eretmochelys imbricata*); the grouper (*Epinephelus sp*); the snapper (*Lutjanus sp*); the fragile star (*Ophiocoma echinata*); the striped sharks (*Chondrichthyes*).

The contents of the Fables Book were determined according to the structure, function and habitat of the plants; the teachers detected the greatest deficiencies in the orchard activity; in this way, conceived as autochthonous and endemic animal characters, many of them in danger of extinction, narrated the complex contents of the necessary sustainable agriculture. The notebook was constructed in such a way that in its first part a content is dedicated to the orientation of the teacher to impart the elementary notions of sustainable agriculture in the subjects of Spanish, Mathematics, Labor Education, Library, World in which we live, Physical Education, Logopedia, Psychopedagogy, Recreation activities, Morning and the garden; the fables were grouped as follows:

First subsystem, Fruits: it was applied from September 8th to October 30th 2014, it was contemplated in this period of time because it is the picking peak of fruit trees and crops are interlaced like: guava, mango, pineapple, avocado, coffee, cocoa and some citrus fruits. It began with a population of 29 schoolchildren with intellectual disabilities. This subsystem has objectives degraded by degrees:

- Identify structure and function of the fruits in Cuba
- Characterize the most representative fruits: coffee, guava, mango and cocoa
- Demonstrate the function of fruits in the protection of the seed
- Identify the seeds in the banana and pineapple
- Act with discipline, order, demand and efficiency in agricultural tasks
- Observe carefully the environment and identify possible damage to the environment
- Characterize the importance of irrigation, so as not to make excessive use of the water resource
- Demonstrate, through mimicry, agricultural work

The elementary notion of fruits: The plant has fruits to protect the seed and then a new plant is born; man takes advantage of the fruit as food; it has sugar, they are tasty and healthy. The fruit trees need an irrigation and suitable fertilizer that is determined by the color. The dark and malodorous fruits are sick and only the plant doctor puts the medicine.

The fables of this subsystem that allowed the formation of this elementary notion are: "La jutía María", "Emilio y sus guayabas", "La Mazorca ronca" and "El Carey Catey". The moral is the structure of the fruit and its usefulness for the plant and man, as well as an efficient use of irrigation in sustainable agriculture.

Second subsystem, Flowers: applied from November 3rd to December 22nd, 2014 was designed in this stage because the beekeeping harvest begins, it had as objectives:

- Identify the flowers
- Exemplifying the importance of pollination in the reproduction of plants
- Identify the soil as an important resource for agriculture and people's lives
- Identify and elaborate organic fertilizers
- Show full dedication to the study, work and social activity that takes place

The elementary notion of the flowers subsystem to be treated is: Plants have flowers to later have a fruit and for that they need a bee. The parts of the flower are: petals and pollen, the bee comes to the pollen and takes it to the hive to make honey. The man who cares for bees is called a beekeeper. The food of the plants is called manure. The way to obtain sustainable fertilizer is by compost and vermiculture. If you do not take care of the soil it leaves, it drains away.

The fables of this subsystem are: "La abejita Natacha", "La lagartija Canija", "La conejita Sofía" and "Nancy la gatica arañona". The moral included the arduous process of pollination, the care of the environment in the conservation of the beekeeping process, the protection of the soil and a sustainable agricultural tillage, were designed according to the needs of the teachers and the agrarian and environmental objective.

Third subsystem, Leaves: from January 5th to February 27th, 2015, was applied on this date because it is the peak of the vegetables, this subsystem had the following objectives:

- Identify and characterize the leaf as a source of energy for the plant
- Exemplify the importance of the process of photosynthesis for the plant and for man as the planet's lungs
- Describe biological control techniques and their importance to the planet
- Water in an efficient and ecological way
- Know, respect and enforce phytosanitary regulations in the garden

- Take care of your own health and that of other people in the agricultural and family environment

The elementary notion of the leaves subsystem is: Plants have green leaves to make photosynthesis. The plants take the water with the fertilizer by the roots they raise it by the stem, they take it to the leaves where they create sugar, like a candy factory that is called photosynthesis. The leaves have stomata where they breathe, mime. The distance of planting of the vegetables is a rule of 30 cm. Pests are harmful animals and there is the nurse of the butterflies that attacks them. You have to take care of the soil.

The fables of this subsystem that allowed the formation of the elementary notion of leaves are: "Podunio Podador Podano", "El Cocuyito Tito medio cojo y cansadito", "La babosa Yasmany comelona y mentirosa" and "La hormiga trabajadora". The morals of the stories are aimed at the students' understanding of the complex process of photosynthesis, the impact of water on the ground and sunlight in this process. The tillage of pruning in different crops, plant health as an indispensable means in sustainable agriculture.

Fourth subsystem, Stem: applied from March 2nd to April 24th, 2015 was designed at this stage due to the milling peak at the sugar mills and the full cycle of the nursery can be observed; This subsystem had as objectives and its degradation by degrees:

- Identify and characterize the stem in the circulation of the plant
- Describe the cultivation of the cane in a simple way
- Describe the afforestation and the use of wood for man
- Exemplifying the importance of forests for soil protection
- Describe the danger of a forest fire and ways to avoid it

The elementary notion of stems content is: Plants have a stem to sustain themselves. The water goes up the stem with the fertilizer that comes from the root and is called xylem; the photosynthesis is made, it goes down the stem and it is called phloem. Identify the cultivation of cane and the process of the plant. The planting distance of the cane and the cedar. The cane is milled in the center to obtain sugar. When planting is important the nursery, the forester and the fireman.

The fables of this stem subsystem that allowed the formation of the elementary notion are: "El Carey bondadoso”, " El fuego malvado ", " El bosque mágico de Tararí ", "La historia de la casa fría", "La lagartija Canija" and "La Bijirita Rita que se quedó sin comida ni casita". These fables had as their main axis the importance of the forest as the planet’s lungs, the reforestation and the interpretation at an elementary level of the complex process of the cane cultivation.

Fifth subsystem, Roots: from May 5th to June 13th, 2015. It was designed at this stage because these crops need 6 to 8 months to be optimal. They are planted in September and are ready on this date, this subsystem had as objectives by degrees:

- Identify the roots in the plant
- Describe sustainable agriculture
- Determine the root as support and way of feeding the plant
- Identify the root as a warehouse of the plants studied
- Characterize the root as a healthy food for men
- Identify the Research Institute of Tropical Viandas as a center of international level

The elementary notion of the root content is: The plants have roots to be fixed to the earth and absorb the nutrients and water with the fertilizer. The plants take the water with the fertilizer by the roots they raise it by the xylem, they take it to the leaves where they do the photosynthesis, they lower the sugar or starch by the phloem; they store it in these crops at the root. The most representative crops are: yucca, malanga, yam; sweet potato, garlic, onion, beet, sago; with their respective planting distances. The objective of the planting distance. The importance of having varieties of root vegetables; different moms and dads; the laboratory to obtain those children of the viands. The importance of climate and irrigation in crops.

The fables of this subsystem are: "La tetuán comelona y enamorada", " El gato haragán que aró en busca de un tesoro ", "La rana diferente", "El caracol ronco Proronco", "La caguama cara de crimen", "The loggerhead face of crime" and "El que no rota no tiene". The guiding thread of these fables was the elementary notion of sustainable agriculture on roots; the importance of the root for the plant; the utility and long tradition of food in the country; the importance of having different moms and dads for crops; the biotechnology of plants; industriousness in the field; the rotation of crops; its importance for plant health and plant performance.

NARRATION OF THE FABLES FOR THE FORMATION OF ELEMENTARY NOTIONS OF SUSTAINABLE AGRICULTURE IN STUDENTS WITH INTELLECTUAL DISABILITIES

Students with intellectual disabilities present a scattered attention and difficulties to concentrate it for a long time, it is important the reiteration of the fable. Memory is indispensable in the narration, has a tendency to be a mechanical memory which undermines the quality of understanding of the characters. They find it complex to arrive at judgments and conclusions

by themselves, they need help to interpret the moral. The processes of thought, analysis, synthesis, comparison and generalization are affected by what the narrative requires to adapt to their learning style. The language so important in the narration of the fables is affected, most of them present a delayed appropriation of the language as well as slowness in its development. Schoolchildren with intellectual disabilities have limitations in the comprehension of the foreign language, poverty of their active and passive vocabulary and a reduced number of grammatical constructions. The teacher has to be cautious in the narration of the fables and to emphasize mime.

The narrative process is in the very genesis of the creation of the fables, the characterization of the characters, their differentiation into positive and negative and the imaginary environment promotes a histrionic display of school children with intellectual disabilities. For their representations the suitable locations were searched, in evening hours, with a suitable psychological climate.

An indispensable moment in the narration of each fable is to make a model reading so that students with intellectual disabilities understand the context. The characters are subdivided in a subtle way, with onomatopoeic sounds, high and low voices; Acting gestures are displayed by the teacher, emphasizing drama, such as the movement of wings or exaggerated twists of the torso, to achieve a favorable climate that leads to the understanding of the moral.

In the narration of fables puppets, objects of nature, drawings created by the own students with intellectual disabilities can be used; photos of the animals to be interpreted, videos, computer animations and songs; all of which allows them to become protagonists of the work, more than just listeners.

It is important in the development of the personality of schoolchildren with intellectual disabilities to narrate the fables in a playful way, since the game itself has a psychological and pedagogical function.

The fable through the game mobilizes the scholar with special educational needs with intellectual disability towards new group models, which is important for attention to diversity; it allows you to share with enthusiasm; facilitates social relations and exchange, while providing satisfaction. The game has "a determining factor in the operative development; the maturation of the nervous system is limited to opening excluded possibilities up to certain age levels "(Piaget, 1964).

INFORMATIVE PHASE

In the process of construction of the Fables Book on sustainable agriculture for schoolchildren with intellectual disabilities as content of Environmental Education, applied in the municipality of Placetas, Villa Clara, Cuba; in the

school "Camilo Cienfuegos Gorriarán": in four cycles from 2014 to 2018, the research was able to verify through the multiple case study the following aspects emanating from the practice:

- Developed attention in each of the subjects and activities where it was applied, with emphasis on the Spanish Language in each of the grades
- It affected the memory with the creation and narration of the fables, where they interpreted characters that described in a simple way the complex agrarian and environmental phenomena proposed by the investigation
- The thought was developed with the use of role plays and dramatizations in a playful way during passive games and under the supervision of the teacher
- The senso-perceptions were favored with a stimulus of new sensations for them. It stimulated their perception of the environment and its care
- Motricity was developed with the use of artistic expressions, as well as the use of objects and materials of nature
- The fables allowed linking the school with the community where it is located, from the creation and narration the family of the students gets involved stimulating them, according to the potential of their children. Then in the theatrical performances the neighbors of the community participate in them stimulating in turn the social inclusion of schoolchildren with intellectual disabilities.
- The use of fables had an impact on job training and the possibility of a decent job, with an elementary knowledge of offers of science and technology in terms of agricultural biotechnology used in their locality.
- The use of fables in the teaching-learning process allowed the recognition of the local agricultural sector, by schoolchildren with intellectual disabilities, motivating them as future farmers committed to the environment.
- The creation of their own stories stimulated the imagination, helped to discard consumerism and commercialism in school children with intellectual disabilities, the formation of a human being as creator of well-being and pleasure.
- The fable stimulated senso-perceptions and especially the ability to observe
- It stimulated the taste and motivation of the *beautiful*
- It caused sympathy to the environment and responsible behavior
- It favored self-evaluation, at the elementary level, as an indicator of ethics and morals

- It allowed spaces to dilute the stress that the teaching-learning process can provide in teachers and schoolchildren

CONCLUSIONS

The theoretical foundation of this work favored the analysis of the background and theoretical research on environmental education, it was appreciated how its treatment of environmental education in school children with intellectual disabilities still crosses limitations and challenges, not resolved at present, it was identified that fables are the means of teaching conducive to the formation of elementary notions of sustainable agriculture, from the contents of Environmental Education, in schoolchildren with intellectual disabilities.

The specialized bibliography of sustainable agriculture in its great majority has a high scientific level, is difficult to understand. The elementary notions of sustainable agriculture that a scholar with an intellectual disability has to know for their social inclusion have been insufficiently treated by science. Fables are the ideal teaching method for the formation of elementary notions of sustainable agriculture in schoolchildren with intellectual disabilities since it contemplates the creation and narration of these ages.

The process of creation and narration of fable notebooks about sustainable agriculture takes into account the particularities of school children with intellectual disabilities, the characters were based on endemic animals of the country in danger of extinction, the contents were selected in such a way that they express the elementary notions of sustainable agriculture treated, according to the imagination of these ages. The narrative process of the fable for schoolchildren with intellectual disabilities allows to correct and compensate the affected processes of language and thought.

The multiple case study applied during 4 years revealed that the Fables Book on sustainable agriculture for schoolchildren with intellectual disabilities of the special school "Camilo Cienfuegos Gorriarán" of the municipality of Placetas, Villa Clara, Cuba; facilitates the formation of the elementary notion of sustainable agriculture.

REFERENCES

Álvarez, C. M. (1999). *La escuela en la vida*. La Habana; Pueblo y Educación. Recuperado de http://files.albanery.webnode.es/200000119-5afe05bf7f/La Escuela en la Vida.pdf

Blanco, A., & González, M. (2015). Ciencia y teatro: una experiencia de teatro científico con alumnado de educación secundaria. Revista *Iberoamericana de Educación, vol. 69*, núm. 3. Recuperado de https://cedoc.infd.edu.ar/upload/ciencia_y_teatro.PDF

CITMA. (2017). Estrategia Ambiental Nacional provincia de Villa Clara Cuba 2016-2020. *Medioambiente*. Recuperado de https://www.patrimonio-ciudad.cult.cu

Craft, l. J. (2013). Viajes fantásticos: cuentos de [in]migración e imaginación *Revista Iberoamericana, LXXIX* (242). Recuperado de http://revista-iberoamericana.pitt.edu/ojs/index.php/Iberoamericana/article/download/7025/7165

Díaz, María Pallisera, Noell, Judit Fullana, & Rovira, Carol Puyaltó. (2018). Retos para la vida independiente de las personas con discapacidad intelectual. Un estudio basado en sus opiniones, las de sus familias y las de los profesionales. *Revista Española de Discapacidad, 6* (1). doi: 10.5569/2340-5104.06.01

FAO. (2016). *Agricultura sostenible*. Una herramienta para fortalecer la seguridad alimentaria y nutricional en América Latina y el Caribe. Recuperado de www.fao.org/3/a-i5754s.pdf

García, J., Feliu, T., Usón, M., Ródenas, A., Aguilera, F., & Ramo, R. (2009). Trastornos invisibles. Las personas con discapacidad intelectual y trastornos mentales o de conducta. *Revista Española sobre Discapacidad Intelectual, 40* (2). Recuperado de http://sid.usal.esidocsF8ART13167garcia_ibanez.pdf

González, A. R. (2008). Curso de áreas protegidas de Cuba y conservación del patrimonio natural. *Universidad para todos*, La Habana; Editorial Académica, Ministerio de Ciencia tecnología y medio ambiente. Recuperado de http://www.especieenpeligro.net/index.php/docs/category/21-curso-de-areas-protegidas-de-cuba-y-conservacion-del-patrimonio-natural?download=47:curso-de-areas-protegidas-de-cuba-y-conservacion-del-patrimonio-natural

García-García, Fran J., & López-Torrijo, Manuel. (2016). El rol de las familias españolas con hijos con discapacidad en la inclusión educativa. Una mirada histórico normativa. *Revista Española de Discapacidad, 4* (2). doi: 10.5569/2340-5104.04.02

García-Romero, Carlos de Fuentes. (2016). Sobre el concepto jurídico de persona con discapacidad y la noción de apoyos necesarios. *Revista Española de Discapacidad, 4* (2). doi: 10.5569/2340-5104.04.02

Guerra, S., Gayle, A., Orozco, M., Anatolievna, S., Álvarez, C., Rivero, M., Cuenca, M. (2010). *Educación de alumnos con diagnóstico de retraso mental*, La Habana; Editorial Pueblo y Educación.

Kemmis. (1988). *Educational research, methodology and measurement, an international handbook*. Ediciones Alguibe. Recuperado de https://s3-euw1-ap-pe-ws4-capi2-distribution-p.s3-eu-est1.amazonaws.com/books/9781135389291/9781135389291_previewPDF

López, M., Echeita, G., & Martín, E. (2009). *Concepciones sobre el proceso de inclusión educativa de alumnos con discapacidad intelectual en la educación secundaria obligatoria. Cultura y Educación*. Recuperado de www.tandfonline.comdoipdf10.11741135640097900023 9

Montañés, P. (2001). *Cerebro arte & creatividad*. Colombia: Editorial Universidad Nacional de Colombia. Recuperado de http://revmexneuroci.com/wp-content/uploads/2014/06/Nm065-06.pdf

Novell, R., Rueda, P., & L, u. S. (2002). Salud mental y alteraciones de la conducta en las personas con discapacidad intelectual. *Guía práctica para técnicos y cuidadores*. Barcelona: Editorial FEAPS. Recuperado de http://riberdis.cedd.net/handle/11181/3215

Pallisera, María, Fullana, Judit, & Puyaltó, Carol. (2017). Apoyando la participación real de las personas con discapacidad intelectual: una experiencia de investigación inclusiva sobre vida independiente. *Revista Española de Discapacidad, 5* (1). doi: 10.5569/2340-5104.05.01

Piaget, J. (1964). *Psicología y pedagogía*. Argentina; Edición Argentina. Recuperado de http://www.mxgo.net/e-booksfree180511/6educacion/Psicologia y Pedagogia-Jean Piaget.pdf

Rodari, G. (2010). *La imaginación en la literatura infantil*. Perspectiva Escolar. Recuperado de http://admin.ulp.edu.ar/ULPWeb/Contenido/PaginaULP79/File/Curso/6 Encuentro/La imaginacinRodari.pdf

Rodríguez, G., Gil, J., & García, E. (1996). *Metodología de la investigación cualitativa*. La Habana; Editorial Pueblo y Educación. Recuperado de https://es.scribd.com/doc/128205939/METODOLOGIA-DE-LA-INVESTIGACION-CUALITATIVA-Gregorio-Rodriguez-Gomez-Javier-Gil-Flores

Schalock, R. L., & Verdugo, M. Á. (2009). El concepto de calidad de vida en los servicios y apoyos para personas con discapacidad intelectual. *Journal of Intellectual Disability Research*. Recuperado de http://dincat.ca/tel/concepto/de/calidad/de/vida/en/los/servicios/y/apoyos/para/personas/con/discapacidad/intelectual

Schalock, Robert L., & Verdugo, Miguel Ángel. (2016). *El concepto de calidad de vida en los servicios y apoyos para personas con discapacidad intelectual*. Recuperado de https://www.researchgate.net/publication/292585397_

Ultimos_avances_en_el_enfo-que_y_concepcion_de_las_personas_con_discapacidad_intelectual

Verdugo, M. Á. (2002). Análisis de la definición de discapacidad intelectual de la Asociación Americana sobre retraso mental de 2002. *Revista Española sobre Discapacidad Intelectual, 34* (1). Recuperado de http://scampus.usal.es/inicoinvestigacioninvesinicoAAMR_2002.pdf

Verdugo, M. Á. (2005). Análisis de la definición de discapacidad intelectual de la asociación americana sobre retraso mental de 2002. *Revista Española sobre Discapacidad Intelectual, Vol. 34*. Recuperado de http://scampus.usal.es/inicoinvestigacioninvesinicoAAMR_2002.pdf

Vigotsky, L. S. (1972). *Obras escogidas.* Moscú: Editorial Pedagóguika.

Vigotsky, L. S. (2008). *Psicología del arte*. Editorial Pueblo y Educación. La Habana. Recuperado de https://www.casadellibro.com/libro-psicologia-del-arte/9788449318504/1071395

ANNEX

Image 1. Orchard activity

Image 2. Speech therapy treatment

Image 3. Psychopedagogy activity

Image 4. Library

Image 5. Fables writing workshopt

Image 6. Fables narration