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The Hands-on Science Network

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the dependence of the production of these cereals in fallow soils areas.

Promotion to the collection of selective used alimentary oils (restoration, taverns, etc.), obtaining low cost raw material for the biodiesel production and eliminating a pollutant source.

Motivate the usage of ethanol as component for the gasoline's (incorporation tax that can go up to 5%) or indirectly by the addition of ETBE.

Utilization on the environmental legislation, with base in non emitted CO₂ by means of the usage biofuel.

Define simplified contractual frames that regulate the relationships among producers, transformers and biofuel distributors.

Promoting, the cooperation among the central and regional authorities with a view to the development of rows of biofuel (marketing actions, usage of biofuel in municipal vehicles, etc.)

Motivate the use of lands that was putted like fallow soils to the development of energy.

Promotion of specific plantation culture, with fast growth and with few cultural demands (in case of the thistle) for bioethanol production.

Quantification and popularization of the social benefits, economics and environmental associates to the creation of a row of biofuel production.

Identification of the existence of market niches where the usage of biofuels is covered from advantages face to the traditional fuels.

13. References

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Work Done in Kindergartens by Our Students Orientated by Distance Learning

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Abstract. During two years, 29 teachers of kindergarten were orientated, by distance learning, in annual university discipline called Seminar in a way of implement didactic projects in biology field in their schools. The aims of these didactic projects were teaching biological concepts to the children and change community attitude to several problems. These objectives were reaching, as prove the inquiries done after the implement of projects. In fact the themes chosen by students were different. Some chosen themes of how protect endemic species of an area, others try to improve the respect to animals and plants and the useful of them to human being. Distance learning reveals a good option because students were of different parts of Portugal including Madeira and Azores Islands.

Keywords. Kindergarten, Biology.

1. Introduction

In Pedagogic and Scientific complement course for Kindergarten teachers, the last discipline is called Seminar. This discipline develop along one year and consists in practical work done in each college by our students and the evaluation of our students were made by the written report, according by the manual [1], and by oral presentation of work and oral discussion . Our students are kindergartens teachers without university graduation, this is why they must do this course in order to maintain their works.

The aim of this discipline is to learn the kindergartens teachers how to plain an activity and how to evaluate their impact in children and involve community. In last two years 29 students were orientated by methodology using in distance learning.

2. Tools used to orientation of seminars

Because our students came of all parts of the country, the seminars were orientated by distance using the tools at disposition to this type of learning: telephone, videoconference, e-mail and learning platforms. In this case the students, in general, did not like use learning platforms,

which is Moodle platform. In fact were verifying that a lot of them did not trust, so the way that almost the students like is by e-mail or telephone.

In the first step of the work that the students must done, is to choose a theme and justify their importance and establish the objective. Second step is to prepare the temporization of activities, identifying for each one of the objectives.

After applying the project evaluated if objectives were reach and if not why. They also determine what were the impacts of this work done with children in community. In same cases the community is small and the activities of children have reflection in the changed of the behaviour of the families.

3. Theme chosen by students and work development

The themes chosen by students were different and each student has different requirements, this may be the reason why e-learning platforms were not the tool chosen by students.

The themes chosen by students were about subject:

- vegetable gardens, its importance and the role in human alimentation,
- protect endemic flora,
- care with pine forest,
- protect species of animals in particular endangered species,
- knowing the needs and importance of cattle,
- care of domestic animals.

The theme around vegetable gardens, the children helped to prepare the field, put seeds in it, different techniques of planting, different roots, stems, flowers and fruits. The children take care of the garden and development the concepts of what's the needs of plants, meanwhile some of the students put in classroom plants in water and add some colour to the water in a way to explain that in fact plants need water, also put some plants in dark to show the children that light is essential. When they made the crop, with the vegetables the children participate in the elaboration of a salad and a soup to eat at lunch. The repercussion of these works with children is that they start in their homes to eat soup and salads without reclaim. Some parents notice that they also want to participate in garden careering.

The theme of protect flora were developed by our students that lived near a protect area. The work with children starts to show the differences between types of plants (Figure 1).

Visits the protect area and teaching why and how they can preserve and respect the nature. A lot of works were done in field and in classroom. In public locals of exposition the works like drawings, gluing and clay pieces were exhibited. The result in community is that all members of the family learn what the importance of the flora nearby and behaviour changes.



Figure 1. Children visiting a botanic park

In Portugal the fires of pine forests is a concern. So some students that live nearby pine forest development the work with the children in this area. First try to learn to children what is a pine, the importance of pine to their habitat. They went with children and observed the other communities of animals and plants living in pine forests. Also explain the importance of wood to men and also the importance of resin. Development in children the correct behaviour when visiting the forest and what to do if saw a fire. These works haven't immediate results in community but in future these children remember some of the concepts.

All the students that chose protect endangerment animals had good results. Normally the students, in these two years, chose endemic species came from the isles, such as marine turtle (*Caretta caretta*) of Azores, Cory's shearwater (*Calonectris diomedea*) of Azores, Mediterranean monk seal (*Monachus monachus*) that is one of the most endangered mammals in the world and lived in Madeira archipelago and Zino's petrel (*Pterodroma madeira*). All these students investigate first the specie and than programmed the activities.

One of the most interesting is that marine turtle die if swallow a plastic bag, children assimilate so good the concept that try to change attitudes of their parent to use more the same plastic bag and speak with all people around to never quit a plastic bag to sea because the turtles can dye. In general the work done with

children that includes visiting to nature, to local museums, dramatization, drawings (Figure 2), etc, lead that children and their families learn about specie and cares necessary for preservation of it.



Figure 2. Children made classroom drawing about turtles

The work developed with children about respect, needs and how cattle are important to Human Being is very important to the children understand the aliments that eat. In case of cow the children participated in doing cheese (Figure 3) and butter. Normally this theme had no repercussion in community except that all of children asked persons of family that have cattle if they call the vet to medicate, given vaccines and take care of them.



Figure 3. Children made cheese

The theme of respect the domestic animals is centre in cats and dogs. The aim is to take care of animals and avoid abandoned animals in the street. Our students done with children a lot activities and one done a "sculpture" of a dog with empty bottles of water and other material (Figure 4). As happen with last theme children asked to all persons knew if animals have a vet

and how often are the visits. Some asked to parents to adopt an animal.



Figure 4. Dog made by children with recycled material

4. Problems felt by students

4.1. During first stage

The first type problem of students is what theme to chose. After is given questioner to fill where the students must wrote the theme, objective, justification of the chose and methodology chosen. During the period giving to fill it the students prefer telephone to put their questions. In this period they contact a lot with us. During this period the average of contacts by students was 5 times.

Was establish a data for conclusion of these period and they send us by email or by post. Was evaluated and if considerer ok they continue is work.

4.2. Application of work

During the application of work the email is preferred by students. Normally the first questions were theory about subject and they want bibliography references to understand the theme. The need of bibliography was more evidence in students that chose an animal endanger, local animal and endemic flora. In this theme is necessary teaching the student how to distinguish the different species.

They send us schemes to given an opinion, asked how to programmed the things to do in visits with children, what kinds of entities can they contact, what persons can they invited to the classroom, send us the questionnaires that they given to parents of the children to fill, asked how to deal with legal questions such as photograph the children and use these to put in written work and use in future, etc.

During these stage the contacts were constant and in some cases three or four days a week.

After every activity or in end of activities was necessary evaluating the repercussion of them and identifying problems and things to be changed in future actions. These also reveal complicated for the majority of the students (about 70%).

4.3. Write the work

The roles to write the work was establish in manual of seminar (general for all themes, in this paper only referred theme of biology).

The students contact to ask the items referred in contents, and they always had problems in writing everything in the 20 pages. Annex can be apart but it only allow put there photos and a copy of questionnaires done.

During the writing, normally, contact to ask the role and with doubt about how to introduce bibliography references in the middle of the text and how to do final references. To the last group orientated was send to all a text with all these explain and with examples. But when the final work was evaluated verified that a few number did not understand everything and done mistakes in it.

In this stage the contacts of students was by email and two times per week (average). A very few try to use Moodle platform at this stage.

4.4. Presentation of work

To present the written work orally, they have 10 minutes, the doubt is what tool to use. The students of continent went to university in Lisbon to done this presentation and students of islands done it by videoconference. The tool chose after our explanation was computer program PowerPoint.

5. Conclusions

This distance teaching is ideal for this kind of work because allow a permanent contact between teacher and students. The doubt that the student had can be explain in a few time. For the teacher was only necessary to have a computer with access to internet. Is equal a very good tool when our students came for all parts of country. In relation to the evaluation done by our students of the impacts the work had in communities the results were very good. In a lot of communities the mentalities of persons who contact with children (family, friends, neighbours, etc.) in fact stay more alert to several problems.

6. Acknowledgements

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7. References

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Aquarium as a Tool for Teaching Sciences at All Grades Levels

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Abstract. The aquarium are an excellent hands on teaching tool in the classroom, it offers students the opportunity to learn directly through experience. The first step is to choose the environmental and animals specifically for the objectives of teaching. Its possible creates environments of different places: seashore, corals reef, lakes, different rivers, etc. The most common tool for classrooms is an aquarium of freshwater. The material necessary depends on the environment chosen. The second step is set up the aquarium with all material necessary. Then is necessary select the gravel and decoration roots or stones. If is recommend for the environment chosen the species of plants to introduce. Finally the fishes and invertebrates must be introduced. The phase of set up allows the classroom understands the requirements of animals and plants, come from different environments. A several examples of different environments aquariums will be referred. After the aquarium is established the water parameters must be control, such as water temperature, pH, ammonia, nitrite and nitrate levels. Graph the information and looks to trends is an excellent way in such levels to explain a lot of concepts. The animals must be fed with appropriate food, this introduce the concept of food chain. The reproduction and behaviour of animals are also very important to understand zoology concepts. The reproduction and grow up of plants are also very important to understand botany. Is given some examples of done this in classroom.

Keywords. Aquarium, Teaching Tools.