

An Analysis on the Importance of Medicinal Garden as Teaching Resource in A School in Northeast of Brazil

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ABSTRACT---- *The objective of this study was to analyze the teachers' view on the importance and the use of a medicinal garden in a public school in a city in northeastern Brazil. It was analyzed how this resource can contribute as a didactic material for the interdisciplinary practice in basic education. The school garden was planted in the second half of 2014, through an intervention project promoted by the University of Pernambuco's Program of Initiation to Teaching (PIBID) Program, linked to the Coordination of Improvement of Higher Education Personnel of the Government of Brazil (CAPES). A semi structured questionnaire was applied to thirteen teachers at the school. The results obtained in the interviews showed the teachers' lack of interest regarding the use of the school garden. Even so, most teachers recognize the importance of the school garden as a didactic resource. With this study it was possible to observe that any project of intervention in the schools requires that the teachers are ready to use it. It is necessary to create a teacher training plan. Alternative teaching tools show themselves as stimulating actions in learning and as an efficient didactic resource in modern school.*

Keywords ---- School Garden; Interdisciplinary; Didactic resource.

1. INTRODUCTION

It is common to see among the professionals of basic education a very limited view on the role of the school in the formation of the students. This extends their pedagogical practices, when adopting traditional and limited methodologies within the classroom. The teacher is only the transmitter of knowledge and, often, his pedagogical practices are limited to the chairs and the picture in the classroom.

Speaking in interdisciplinary, it should be emphasized that the curricular parameters of secondary education in Brazil are oriented towards the development of a curriculum that contemplates interdisciplinary. This is an indispensable tool for the better understanding of personal relationships and different disciplines. This dynamically enables the introduction of knowledge in an innovative way.

Since not all primary schools have laboratories for practical classes, the school garden has the possibility of providing didactic pedagogical activities. It joins theory and practice, assisting in the teaching - learning process (MORGADO, 2006). The school vegetable garden, when combined with the cultivation of medicinal plants, used by the population in the fight against their diseases, appears as a tool that contributes with benefits to the school community. It is possible to develop activities such as the creation of sustainable habits in students, promoting a true Environmental Education where the students are prepared to understand the interrelationships of human beings with nature (LANCHO, 2007).

Barbosa (2009) points out that the school garden provides everyone who participates with the opportunity to know and respect the environment in which we live. It provides the greatest knowledge about plants, mineral nutrients, soil, microorganism, insects, and provides direct contact with the natural cycle of the environment.

For Barros (2011), Plant cultivation is a common practice in cities in the interior, where gardens are developed in schools, neighborhoods and in the backyard. This ensures a production of alternative foods and medicines to serve a small portion of the nonprofit family population

In this context, we know the real difficulty of implementing an element such as the vegetable garden in the school environment, from its implementation to its use as didactic resource and its maintenance. The great challenge that teachers face is the insertion of the garden as a practical element in their daily life at school and how to use it to contribute to the education of their students. How to use in their practices at school and cross-cutting themes that use sustainability, environmental education, awareness, and mainly considers as a different way of reinventing pedagogical doing.

2. MATERIAL AND METHODS

2.1. Study area

In order to carry out this research, the municipality of Nazaré da Mata was chosen, located in the state of Pernambuco, northeast region of Brazil. This municipality is located 70.5 km from the capital Recife. The municipality has 21 schools, 15 of which are public, and six are private. The Maciel Monteiro School was selected for the present research, is located in the central region of the city, has about 600 students enrolled, distributed in 12 classrooms. The faculty is formed by 21 teachers and four interpreters of Brazilian Sign Language. The school still has a structure of two teaching laboratories, one of which is computer science and one of science, as well as eight bathrooms, two gardens, a mini-court, a teachers' room and a glass.

The idea of the research came after the execution of an interdisciplinary subproject in the teaching of biology through the University of Pernambuco (UPE) Institutional Scholarship Program for Initiation to Teaching (PIBID). The School received the implantation of a vegetable garden with medicinal plants in the year 2014. This garden was developed with volunteer students of the ninth year and first year of high school. Due to the lack of external space available at the school, tires were used to plant the seedlings. Smaller species were used, and 11 species of medicinal plants were selected (table 1).

| POPULAR NAME | CIENTIFICO NAME |
|-----------------------------------|--|
| Alecrim (Rosemary) | <i>Rosmarinus officianalis</i> L.; Família: Lamiaceae |
| Babosa | <i>Aloe vera</i> (L) Burm. F; Família: Xanthorrhoeaceae |
| Boldo | <i>Peumus boldus</i> Mol.; Família: Monimiaceae |
| Capim-santo (Holy-grass) | <i>Cymbopogon citratus</i> (DC) Stapf.; Família: Poaceae |
| Mastruz | <i>Plectranthus amboeniscus</i> (Lour.) Spreng; Família: Lamiaceae |
| Hortelã-graúdo (Mint) | <i>Mentha arvensis</i> L.; Família Lamiaceae |
| Erva-cidreira (Lemongrass) | <i>Melissa officinalis</i> L.; Família: Lamiaceae |
| Colônia (Cologne) | <i>Alpinia zerumbet</i> (Pers.) B.L.Burt & R.M.Sm.; Família: Zingiberaceae |
| Camomila (Chamomile) | <i>Matricaria chamomilla</i> L.; Família: Asteraceae |
| Manjeriçã (Basil) | <i>Ocimum basilicum</i> L.; Família: Lamiaceae |

2.2. Data Collection

We interviewed 13 of the 25 teachers who work in the school. The interviews took place in September 2016, with semistructured forms containing 10 open and closed questions that asked for socioeconomic data of the teachers, as well as information about the series that they teach, subjects that teach, time of teaching, and their perceptions about the importance of the garden, its usefulness as a didactic resource, and about the knowledge they have about the plants that exist in the school garden.

2.3. Data analysis

After the interviews, a database was built in Microsoft Office Excel 2013, to systematize the data provided by the informants in the interviews. For the open questions, the answers were previously categorized so that the citation frequencies were calculated.

3. RESULTS AND DISCUSSION

3.1. Characterization of interviewees

All teachers interviewed are from High School. Of the 13 teachers interviewed, two are biology teachers, two from Portuguese Language, one is an English teacher; two are mathematics teachers; one of Physics and Mathematics; two are Geography; two teach Chemistry and Biology and one is a professor of Physical Education.

Regarding the teaching time, the shortest reported time was four years and the highest was 29 years in the teaching. On the subject areas of his graduations, four interviewees were graduated in Letters, four graduates in Biology

and a single professor graduated in each of the following areas: Geography, History, Physical Education, Mathematics and Chemistry.

3.2. The importance of gardening in teachers' vision

When questioned about the importance of the garden in the school environment in which they work, all teachers interviewed stated that they recognize their importance of existence in school. However, when asked for a justification for them, 62% of teachers said that gardening is important for a discussion about healthy eating, stating that it would be important to "Raise awareness of the importance of enjoying healthy food without pesticides."

For 23% of the interviewees the garden was related to their role as medicinal plants and 15% reported that this space can be used for activities that stimulate teamwork and teacher's class. This scenario is curious, as it shows that most teachers associate the importance of the garden with food alone. In fact all the species that were planted in the school only have medicinal value and not food. This shows the difficulty of teachers in being able to attribute didactic activities to the garden in their teaching activities.

One of the great challenges of education is to discover and propose means that allow teaching and learning according to the demands of a renewed education. Within this context, the importance of vegetable gardens in the school environment can be used as a resource for didactic activities, serving as a living laboratory in practical activities not only in the disciplines of Science and Biology, but aiming at an interdisciplinary context, seeking an association between the different disciplines, thus generating a mutual enrichment in the teaching-learning process (SANTOMÉ, 1998).

3.3. Use of Vegetable Garden as Teaching Activity

When the interviewees were asked about the didactic activities that can be developed in the school garden, the teachers responded that they recognize this resource as an element that contributes to the didactic activities. but their answers were contradictory. About 39% of teachers said that activities of an interdisciplinary nature can be developed in the garden, as can be seen in the response of a teacher who spoke "In Portuguese language, for example, we can do a text production emphasizing the importance of gardens".

Recognition of the interdisciplinary importance of the garden is an important factor, but it was present in the speech of a few teachers, this was already expected, since most of us were teachers of a discipline, we worked alone in the classroom and we do not have paid time to discuss with teachers from other disciplines. How can we do interdisciplinary under these conditions?

Teachers should seek innovative methods that promote meaningful learning according to the students' contextual reality. The teaching of sciences has an interdisciplinary character, thus allowing a greater interaction of the students with the purpose of learning. It can be a tool capable of diversifying the methods in search of quality knowledge (CAMPELLO 2006).

Again indicating the importance of food in the gardens appeared in the justification of 23% of teachers, who associated the garden with possible food activities. Another 23% indicate possible activities of character aimed at environmental awareness, and 15% of teachers did not know to indicate didactic functions for the gardens. With this we see once again the limitation of the teachers in assigning didactic values to the vegetable garden present in the school.

According to CRIBB (2010), the school vegetable garden is a space conducive to the use of interdisciplinary pedagogical activities. With them one learns about environmental values, one obtains information on species of cultivated plants, on the use of organic fertilizers and agrochemicals. In this way, the practice of environmental education is extended. In addition, it can stimulate the use and recycling of disposable materials, to be used in the form of beds, developing the awareness of environmental preservation. However, few teachers have managed to associate the garden as a resource that can be used in environmental education strategies. The purpose of interdisciplinary is to extend each discipline of knowledge, not a simple displacement of concepts and methodology, but a conceptual and theoretical re-creation (PAVIANI, 2008).

In the case of science education, the decontextualized practices that are used in schools have been questioned, which generates in the students lack of interest in the content worked. We know that the causes are numerous, including the didactics and methodologies adopted in the classes, which are often based on traditional methods, thus contributing to the discouragement of students to study sciences (SOUZA et al., 2009).

According to Ataide & Silva (2011), there are currently some methodological aspects of research in the field of science teaching, which seeks to innovate didactics and curriculum in this area. Complementing the theory associated with the practice, it includes complementary activities that contribute to the teaching, where the teacher should not be limited to the traditional methods of learning.

3.4. Activities developed in the School that use the vegetable garden as didactic resource

The teachers were asked about the didactic activities they already developed with the students in the vegetable garden using the school garden. All teachers said that they never used the garden to develop any didactic activity. Analyzing the answers about the lack of use of this resource, it was noticed the lack of interest of the teachers. For Theisen et al (2015) the participation of students, teachers and staff in the implementation of the vegetable garden in school is fundamental for greater interaction between school and community.

Of the total number of respondents, 46% did not know why they did not use the garden in their didactic activities. Another 23% reported that they lack time to insert the garden as a resource in their work methodologies. One of the teachers answered "It is difficult to relate activities in the garden with the pedagogical time we have. You can not work the contents of the subjects in the classes".

For 15% of teachers lack opportunity to develop some activity in the school garden. Worrying information was that 15% of teachers said that the school did not have a vegetable garden. This shows the lack of recognition over the space in the School, with a medicinal plant garden implanted since the year 2014.

Oliveira (2014) emphasizes that it is up to the educator, a singular agent of student knowledge construction, to create a strategy in the educational environment to arouse students' interest and mobilize people to think and do it differently.

3.5. What is missing for the garden to be used in practical activities with students?

As the teachers said they did not use the garden in their class activities, they were asked what they are missing in order for this to happen. 15% of teachers did not know how to respond, showing lack of interest in the garden. Another 39% of respondents justified once again that they lack time to insert some activity with their students in the garden. 46% of teachers said that the garden does not have any important aspect to be used in their areas of knowledge.

It is worrying to realize the deficiency of the teachers on the interdisciplinary application of the gardens in their disciplines. This is a consequence of the lack of training of these professionals on the utility of alternative resources, reinforcing that there is no point in having new didactic resources in the school, if the teachers are not qualified to use them.

The main obstacles to be overcome for the implementation of interdisciplinary in classrooms are:

- a) Very specific training of teachers, who are not prepared at the university to work interdisciplinary;
- b) Distance of language, perspectives and methods between the disciplines of the area of Natural Sciences;
- c) Lack of space and time in institutions to reflect, evaluate and implement educational innovations (RIVAROSSA DE POLOP, 1999).

Nowadays, with the scientific and technological advance, basic education has taken on new challenges, and the school has also become a necessary environment to develop new skills and practical knowledge of the students. In this way, teachers need to better prepare students so that they have the possibility to face the labor market. Thus, education plays a key role in preparing individuals for the challenges of the labor market (MEDEIROS, 2010).

The Brazilian Ministry of Education seeks new educational models through interdisciplinary programs. In this context, the school garden becomes an option capable of reaching this goal, because through it it is possible to develop several pedagogical activities (FERNANDES, 2015.)

Thus, for purposes of educational practices, the school garden as the organizing axis allows the study and systematic integration of cycles, dynamic processes of natural phenomena, surpassing the area of natural sciences. Teachers can use this tool to address problems related to other areas of knowledge.

Learning from the garden brings educational benefits, helping students build values. They make students ecologically literate, since early establishes a healthy relationship with the environment, and also develops their critical sense. It causes them to become subjects capable of assuming a new posture in the face of environmental problems (CASCIANO, 2000). The activity in the garden is an alternative to join the playful to the environment, causing the interest of the students, in front of environmental education. There is possibility to work with different activities involving the garden in all school subjects. (MORGADO & SANTOS, 2008).

4. CONCLUSIONS

With the accomplishment of the present research, it was possible to conclude that the school garden planted in the year 2014 in an interior of the State of Pernambuco through the Program Institution of Initiatives to Teaching (PIBID), did not have its main objective reached. This resource is not being used by teachers as a teaching tool.

The data collected in the research showed that teachers recognize the garden as a didactic element, but do not use this resource in their didactic activities. The implementation of any didactic resource in a school must be accompanied by a training plan for teachers.

Even if teachers are not prepared to use a didactic resource such as the school garden, we can not rule out the importance of having a garden in the school environment.

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