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Feeling, Experiencing, Learning: Environmental Education at Escola Vila

Isabelle Aida Heilman
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SIT

Brazil: Social Justice and Sustainability

Feeling, experiencing, learning:

Environmental Education at Escola Vila

An ISP MONOGRAPH Submitted in Partial Fulfillment of the Requirements of:

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Submitted by

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Abstract

Teaching children about the importance of the protecting environment is a key step in preparing future generations to solve environmental issues. The purpose of this paper is to describe and analyze how Escola Vila in Fortaleza, Brazil integrates environmental education into its curriculum to promote positive environmental actions later in the children's lives. Classroom observations revealed how environmental education is incorporated into the curriculum in an interdisciplinary way. Students at Escola Vila learn about the environment through creative projects, experiential learning, sustainable practices on the campus and human rights education. Interviews with alumni showed that these four ways that Escola Vila teaches environmental education have created lifelong positive feelings toward the environment as well as sustainable habits in students after they leave the school. Through its environmental education techniques, Escola Vila produces creative thinkers with a strong ecological consciousness that are prepared to find solutions for the environmental issues of their generations as well of future generations.

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Definition of Terms

Ano: A school grade level, for example: 5^o ano is 5th grade. Some grade levels at Escola Vila are separated into two classes, indicated by an A or B (like 5^o ano A).

Alumnus (singular)/Alumni (plural): Former students of Escola Vila.

Biodança (biodanza): A form of body expression through dance and music that helps liberate emotions and creativity.

Civic engagement: Actions such as public demonstrations that are designed to help citizens express their views on current issues.

Curriculum: The content of a set of educational courses.

Environmental education: A type of education which teaches about the natural world, man's relationship with it, and how to modify our behavior in order to live more sustainably.

Experiential learning: A teaching technique where students learn by performing hands-on activities where they can explore concepts through their own experience.

Ensino Fundamental I: A category for the classes for students from 1^o ano through 5^o ano.

Ensino Fundamental II: A category for the classes for students from 6^o ano through 9^o ano.

Educação Infantil: The classes for students of less than one year through being six years old. Each class is named for the age group of the children, such as *infantil 5* is the 5 year old age group.

Human rights education: A type of education which teaches about the rights all human beings are entitled to, such as freedom from slavery, rights to health and education, and equality before the law.

Interdisciplinary education: A method of teaching that incorporates two or more disciplines.

Living pharmacy: One of the gardens at Escola Vila which grows medicinal plants and herbs.

Pedagogy: A style or technique a teacher employs to teach students.

Solidarity: The feeling of unity among men over common responsibilities and a commitment to supporting one another.

Sustainable practices: Actions which are employed to help protect and reuse natural resources and reduce energy use to aid in the wellbeing of the planet. For example: composting, recycling, and using solar energy.

Introduction

As a global community, we are experiencing environmental problems which will affect the world for generations to come. The younger generations of our population are in a position to find creative solutions for these environmental issues if they are properly educated. Escola Vila is a private school in Fortaleza, Ceará, Brazil which provides creative environmental education for children. Through four main methods creativity, experiential learning components, sustainable practices on the campus, and human rights education, Escola Vila incorporates environmental education into its curriculum. The central thesis of this paper is that through its environmental education techniques, Escola Vila produces creative thinkers with a strong ecological consciousness that are prepared to find solutions for the environmental issues of their generation, as well of future generations.

One of the main objectives of this paper is to examine more in depth the four ways in which environmental education is taught at Escola Vila through the results of my research. The creativity section describes the variety of creative opportunities Escola Vila gives its students to explore their relationship with nature and to express themselves. In the experiential learning section, the two main experiential learning components of laboratory and student demonstrations are explained and evaluated. In the sustainable practices section of the paper, some of the sustainable practices that Escola Vila implements on its campus are described, in particular how the school integrates recycling into many different parts of school life. The human rights education section explores the importance of teaching the children about their rights and responsibilities as citizens, human rights, and the value of solidarity. Another objective of this paper is to show the Escola Vila alumni's opinion on the four methods of environmental education curriculum integration in shaping their environmental values. By sharing their

experiences, the alumni give some perspective into the efficacy of these four techniques in instilling lifelong positive environmental values and habits in Escola Vila students.

Literature review

Environmental Education

Man is inextricably linked to the environment. Every day we interact with the environment on a variety of levels. Some of these interactions can be positive; however with an increased dependence on non-renewable fuels and a shift toward mass consumerism, many of our interactions contribute to environmental degradation. Although we can currently see some of the harmful effects, future generations will have to bear the full negative consequences. To begin to alleviate these environmental issues, the children of today must be taught how to conserve, reuse and recycle, so that they will have a better quality of life in the future. By integrating environmental education into a variety of subjects early in life, children will be able to see how related the environment is to their daily lives. Teaching children the link between their lives and the environment will stimulate positive attitudes toward the natural world and promote constructive actions to protect the environment.

Schools have an opportunity which larger government campaigns lack, which is the length of time they have to teach and develop values in their students. Teaching environmental education provides educators with more opportunities to teach students about the importance of their relationship with natural world than government campaigns because of school's frequent direct contact with students over a long period of time¹. Campaigns outside of school are limited because they are of a "transitory nature and utilize only mass communication and media, with a

¹ Hua, Bian. 2004 "Integrating Environmental Education into Elementary School Curriculum." Chinese Education and Society 37(4): 49.

consequent reduction in effectiveness”². To assure that environmental education is effective and long lasting, it must begin by helping situate the children in relation to the larger world ecosystem. Understanding the interconnectedness in the relationship between the natural world and humans is critical to be able to see how our actions positively and negatively affect the environment. A key part of comprehending the relationship of man and nature includes having a positive self-image, because “if man is understood as an ecosystem integrated with the total environment, he will develop positive values, attitudes and relations with the environment only if he also develops these positive values toward himself”³. A positive self-image in the greater ecosystem recognizes that man plays a valuable role in the natural world and should do his part to protect the environment in which he lives. From an early age “it is vitally important to stimulate a positive self-image in children, leading them to value themselves and perceive that they are part of a larger context”⁴. If environmental education helps children recognize their place in the larger ecosystem early in life, they will develop more positive attitudes toward conservation and preservation later in life.

Once the role of humans in the greater system is established, children need to explore the dynamics in the relationship between man and the natural world. This learning can take place in a variety of spaces. Traditionally the biology classroom is where children learn about the relationships between different organisms in the natural world; however this can also be learned outside of school. Allowing children to explore their surroundings and play in natural spaces gives them an opportunity to interact with nature and discover the relationship themselves⁵.

² Schall, Virginia T. 1994 "Environmental and Health Education for School Age Children: A Transdisciplinary Approach." *Caderno De Saude Publica* 10(2): 261.

³ Schall Virginia T. 1994: 261

⁴ Schall Virginia T. 1994: 261

⁵ Tarr, Kumara. 2008 "Enhancing environmental awareness through the arts." *Australian Journal of Early Childhood* 33(3): 20.

Personal exploration accompanied by a more formal base of knowledge about the environment creates positive attitudes about conservation and preservation. These positive attitudes in turn promote positive behaviors and actions for the protection of the environment.

To reflect the complex relationship humans have with the natural world, environmental education should follow an interdisciplinary approach. This means that information about the environment should be integrated into disciplines outside of science⁶. Having an interdisciplinary approach to environmental education is advantageous for student learning for several different reasons. First, an interdisciplinary approach gives children the opportunity to discover the complexities of their relationship with the environment through many different subjects⁷. Through the interdisciplinary approach, students analyze issues from different perspectives. An issue such as pollution has political, economic, social, and health consequences, all of which need to be examined to better understand the complexity of environmental issues⁸. Also, incorporating environmental education into other subjects is a way to teach about the environment where there would not be space for a separate natural science class⁹. This way schools do not have to hire new teachers to teach about the environment, but may instead have to invest in some extra training for their current teachers¹⁰.

⁶ Boeve-de Pauw, Joelle, and Peter Van Petegem. 2011 "The Effect of Flemish Eco-Schools on Student Environmental Knowledge, Attitudes and Effect." *International Journal of Science Education* (33.11): 1514.

⁷ Song, Young Imm Kang. 2008 "Exploring Connections Between Environmental Education and Ecological Public Art." *Childhood Education* 85(1): 14.

⁸ Boeve-de Paw, Van Petegem 2011:1514

⁹ Hua 2004:48.

¹⁰ Hua 2004: 49,52.

Creativity and the arts in environmental education

Effective integration of environmental education depends on the way course material is taught. The way environmental material is presented to students will ultimately affect what attitudes they develop, and in turn which actions they perform. As Young Imm Kang Song (2008) explains, “one of the most fundamental problems with environmental education is the detached, unemotional way in which it is taught, thus implying a disconnection and separateness from human existence”¹¹. Students are more likely to enjoy creative methods of learning than uninspired methods. Creativity can manifest itself in many ways in the classroom. Teachers can be creative by using multi-media presentations in their classes or taking students on field trips to see the nature first hand. They can also give their students opportunities to creatively express their relationship with the natural world through photography, painting, drawing, writing about or filming the world around them.

Incorporating the arts into the classroom is a way to extend the use of interdisciplinary education. Utilizing arts as a teaching technique linked with environmental education can reveal the different facets of seemingly one dimensional issues. Engaging students in creative activities “has the potential to change or enhance participant’s self-awareness, feelings of empowerment and artistic validation”¹². Giving the children a space to express their feelings toward nature allows them to expand their awareness about their relationship with the natural world. Including creative activities in class also “makes environmental education more experiential and helps

¹¹ Song, Young Imm Kang 2008: 13.

¹² Reinsborough, Laura. 2008 "This Revolution Can Dance: Environmental Through Community Arts Education." *Canadian Journal of Environmental Education* 13(1): 44.

build appreciation, awareness, and a sense of shared responsibility for nature that students may carry for the rest of their lives”¹³.

Experiential environmental education

To fully integrate environmental education into the lives of children, they have to actually experience nature with their own hands and eyes. This is why experiential learning is essential in the environmental education classroom. As Song (2008) explains,

This powerful, immediate experience fosters a strong relationship and aesthetic response, but also can motivate a student to action when it is situated within a context of factual information, creative idea exploration, interdisciplinary ideas and tools, and a sense of social awareness and concern for the greater good¹⁴.

As children experience nature first hand, they start to build memories and make emotional connections with the environment. These emotional connections can be explored and reflected upon through creative activities, expanding their relationship with nature.

Schools have a variety of options as to how to incorporate experiential learning into their curriculum. Experiential learning can be as simple as taking the children for a walk in a natural space and letting them look closely at the relationships between plants and insects. For older children, schools can set up sustainable activities such as campus trash clean up, separating recyclables, providing students with magazines and periodicals talking about environmental issues and screening environmental movies¹⁵. Giving students this wide variety of activities shows them that there are many ways in which they can strengthen their relationship with the environment.

¹³ Song 2008: 13.

¹⁴ Song 2008: 15.

¹⁵ Hua 2004: 52

When schools follow sustainable practices and provide green spaces for the students, they make a greater statement about their commitment to environmental education. The environmental impact of these schools is two-fold because the schools “(1) better the environment directly through the adoption of an environmental management system, (2) and so indirectly by, changing the way students perceive and interact with the natural world”¹⁶. This direct and indirect effect is the ultimate goal for environmental education because it achieves a current solution for environmental issues, and also sets up a solution for the future.

Through interdisciplinary, creative, and experiential environmental education, the children of today will develop positive attitudes about the natural world and conservation. These attitudes will make it more likely to achieve the end goals of solving current environmental issues. Without schools taking this step to teach children about the importance of man’s relationship with the natural world, it will be difficult to instill positive environmental values in the youth.

Escola Vila employs these environmental education techniques to teach its students about their relationship with the environment. Using four main methods, creativity, experiential learning, sustainable practices and human rights education, Escola Vila teaches its children environmental education in an interdisciplinary way. These combined techniques provide for an effective environmental education, which instills positive environmental values in its students for life.

¹⁶ Boeve-de Paw, Van Petegem 2011:1514

Location of research: Escola Vila

Only two blocks away from the heavily transited Avenida Aguanambi, Escola Vila is a small forest amidst the chaos of the city of Fortaleza. The walls that surround the school are painted blue and depict children doing yoga and playing in trees, a clue into what happens inside those walls. Walking through the front entrance you are transported to an inspiring and magical place where the walkways are lined with tall trees. At a small distance you can hear the peals of laughter of children playing in the sand area and climbing up the tree house. After further exploring you see a child throwing his banana peel over a tall fence to a donkey, who is surrounded by chickens, ducks, turtles and rabbits.

Escola Vila began as a backyard project between a group of mothers. Spearheaded by current director Fatima Limaverde, the vision was to educate their children to be well rounded, happy, creative and environmentally conscious citizens¹⁷. Soon, the project moved from the backyard to be a day camp which included activities in music, drama, sewing, art, gardening and recreation¹⁸. The camp was a success, so the mothers decided to open the space for other children from Fortaleza to participate. Soon after the success of the camp, the idea of establishing a school with the same philosophy of creativity and environmental consciousness was born. The school would be named Escola Vila, standing for “*Vivência Infantil, Lazer e Aprendizagem*” (childhood experience, leisure and learning)¹⁹. Vila’s creators Fatima Limaverde and Geraci Melo held information sessions in November 1980 so parents could learn about the mission and

¹⁷ Patricia Limaverde Nascimento, “Educação Bio-sustentável, Eco-sistêmica E Transdisciplinar – Uma Prática Da Escola Vila,” (Fortaleza: Expressão Gráfica Editora, 2008): 104.

¹⁸ Limaverde Nascimento 2008: 23.

¹⁹ Limaverde Nascimento 2008: 105.

philosophy of the school before opening with *Educação Infantil* for 68 children in 1981²⁰. Nine years later in 1991, Escola Vila added *Ensino Fundamental*. Vila's students are from a variety of races, socio-economic classes, and educational needs such as children with Down syndrome and autism²¹. These children learn to work together through group activities, projects and play.

At the center of Escola Vila's curriculum stand three conceptual pillars, the individual's relationship with oneself, the relationship between man and the environment, and the relationship between man and society²². These three pillars are incorporated into lessons, discussions, homework, and art projects to reinforce the importance of each of these relationships. The individual's relationship with oneself is taught both through personal reflection and in the group setting. At the end of each quarter, the children evaluate their work in the class and give themselves grades based on personal reflection on their work over the quarter. The children also assign their peers grades based on their perception of the student in class and information on participation, attendance and homework provided by the teachers²³. This type of evaluation teaches children to evaluate themselves and others honestly and justly. Other topics explored under the individual's relationship with oneself are personal meditations built into classes and the importance of good health and nutrition²⁴. The youngest students through the oldest students are taught healthy eating and exercise habits through class research projects, physical education classes and healthy snacks and meals which are provided by the school²⁵.

To complement the pillar of man's relationship with himself, Escola Vila also provides space for the students to explore and learn about their relationship with other human beings.

²⁰ Limaverde Nascimento 2008: 105.

²¹ Limaverde Nascimento 2008: 103.

²² Limaverde Nascimento 2008: 124.

²³ Field Journal, page 17, Observation. November 16, 2011.

²⁴ Limaverde Nascimento 2008: 127.

²⁵ Field Journal, page 68, Themes – Health and nutrition.

Because of Escola Vila's diversity in the student body in terms of race, socio-economic class and educational needs, giving the children an opportunity to interact and work with each other in the classroom fosters cooperation, collaboration and compassion²⁶.

The pillar that Escola Vila is most recognized for, and the one I was most interested in, is that of the relationship between man and the environment. Students at Escola Vila interact with the environment everyday on several levels. The campus itself is full of trees, shrubs and other plants. These physical reminders of nature are visible from every classroom I visited²⁷. Direct contact with the plants and animals at the school is incorporated in a variety of disciplines including Portuguese, science and art. As a school, Escola Vila goes above and beyond the stated laws which intend to protect environment and by not purchasing polluting products and implementing a variety of sustainable practices on the campus²⁸. Escola Vila also provides a space for families to bring their recyclable trash to be used in art projects or to be donated to daily recycling collection. Through these interactions with the natural world, the children at Escola Vila learn both their place in the larger world ecosystem and their responsibilities to help take care of that ecosystem.

To cohesively link these three pillars, Escola Vila has developed a set of six projects which every class participates in over the course of the year. Each project includes a different theme which helps to teach the Escola Vila values of respect, solidarity, and environmental protection among others²⁹. These projects explore the themes of society, Indigenous roots of Brazil, nature, Brazilian traditions and customs, socio-environmental issues, and human rights.

²⁶ Limaverde Nascimento 2008: 135.

²⁷ Field Journal, page 69, Themes - Nature.

²⁸ Limaverde Nascimento 2008: 131.

²⁹ Limaverde Nascimento 2008: 142.

Depending on the age level, these projects include group research projects, drawings, presentations and public demonstrations³⁰. These projects combine experiential, emotional and practical knowledge so the children can think critically about these important world themes.

Escola Vila tries to incorporate creativity as much as possible into the children's educational experience. The curriculum includes the plastic arts, creative writing and team building games to help students incorporate their emotions into their thought process in addition to their critical reasoning³¹. Students also take separate art classes where they learn about ceramics, crochet, drawing, painting, music and theater³². Apart from the traditional art classes, Escola Vila also offers a class called "*corpo*" where the students learn about group dynamics, yoga, meditation and *biodança*. The *corpo* classes help the students explore their bodies and express themselves creatively³³. The focus on drawing is present in the classrooms because many of the walls are covered with drawings, paintings, and collages created by students³⁴. By incorporating creative projects in the curriculum from an early age, Vila hopes to form more creative thinkers who will be better equipped for their future in the job market and who will be happier in their lives overall³⁵.

In addition to awakening their emotional thinking through the arts, Escola Vila also promotes creative thinking through their laboratory exercises. Each class goes through eight laboratory themes, each with its own activities where students learn about the theme through an experience³⁶. Laboratory themes vary between flora and fauna to alternative energy and home

³⁰ Field Journal, page 41, Interview: Fatima Limaverde. November 23, 2011.

³¹ Limaverde Nascimento 2008: 123.

³² Limaverde Nascimento 2008: 172.

³³ Field Journal, page 31, Interview: Rosaline Limaverde. November 21, 2011.

³⁴ Field Journal, page 68, Themes – Creativity.

³⁵ Field Journal, page 44, Interview: Fatima Limaverde. November 24, 2011.

³⁶ Field Journal, page 69, Themes – Experiential learning.

maintenance. The depth to which the students explore each theme depends on the age level. Laboratory exercises often incorporate several different disciplines to demonstrate how linked each theme are to their children's overall education. For example, a laboratory about common fruit trees in Brazil will teach the children about the biology of the trees, their scientific names, health benefits from eating the fruits and how to prepare the fruits³⁷. This interdisciplinary approach to the environment reinforces the interconnectedness of man with the environment.

The principal objective of Escola Vila is to develop a sense of responsibility in their students for both taking care of the earth and being respectful to other human beings³⁸. Through the use of creative teaching techniques and the arts, Escola Vila teaches its students to think with both their emotions and their minds³⁹. Experiential learning components help the students learn through firsthand knowledge and exploration. The marked presence of plants and animals on campus is a constant physical reminder of the beauty of the natural world, inspiring the need to protect nature. A variety of civic engagement activities show the children their many responsibilities as citizens of Brazil to be confident in their beliefs. Through all of these techniques and activities, Escola Vila hopes to produce happier, ecologically conscious and engaged citizens.

Methodology

The research for the following monograph was collected over three and a half weeks at Escola Vila in Fortaleza, Ceará during October and November of 2011. During these three and a half weeks I observed classes from the school hours of 7:30 am to 11:50 am as well as some after school activities after 12:30 pm. I also participated in three out-of-school events, which were the

³⁷ Field Journal, page 45, Interview: Fatima Limaverde. November 24, 2011.

³⁸ Field Journal, page 44, Interview: Fatima Limaverde. November 24, 2011.

³⁹ Limaverde Nascimento 2008: 123.

30th Anniversary party for Escola Vila, a solidarity transportation student demonstration at the *Superintendencia Regional No Estado de Ceará, Departamento Nacional de Infraestrutura de Transportes* and the end of the year school performance. Most of the research time was dedicated to classroom observations, which provided great insight into the educational process of Escola Vila. Throughout my time at Vila I observed classes in a variety of subjects, such as theater, science, English and Portuguese in the age groups 1 year to 15 years. However, due to the timing of this research being the end of the school year, many of the classes observed were performing final evaluations, limiting my observations of typical classes.

Outside of classroom observations, both formal and informal interviews provided the necessary perspectives to understand the pedagogical philosophy of Escola Vila and its practice. Teachers whose classes were observed were formally and informally interviewed about their environmentally educational teaching techniques and use of creativity in the classroom. The majority of these interviews were held during class time breaks, which resulted in concise interviews. I also formally interviewed the Director and Founder of Escola Vila, Fatima Limaverde, about the school's pedagogical framework, sustainable practices and future projects.

Formal interviews with six alumni of different genders and class years at Vila provided the information for my evaluation of the effectiveness of Vila's educational model. Four of the alumni were male and two were female. Three of the alumni were employed at Escola Vila at the time and three were university students. This information was augmented by some interview answers from the Director, Fatima. Due to time constraints and possibility of meeting, I was only able to interview six alumni, who cannot represent the entire group of alumni who have gone through Escola Vila over the past 30 years; however through their interviews I was able to gather a general understanding about the perspectives of former students.

Journal articles and books gave me the necessary background information in environmental education, interdisciplinary education, and creativity in education. Specifically, the book Educação Bio-sustentável, Eco-sistêmica E Transdisciplinar – Uma Prática Da Escola Vila by Patricia Limaverde Nascimento was essential for understanding the theoretical framework for the educational model of Escola Vila.

Social relevance

Decades of unsafe environmental practices causing pollution of air, land and sea have left people in many communities around the world living in unhealthy conditions and subjected to long term health consequences. To eliminate this combination of environmental degradation and violations of human rights, known as eco-injustices, the world community must come together and address the environmental issues currently afflicting our planet⁴⁰. One approach to solve this conflict is to teach children about environmental issues. Teaching environmental education from an early age is critical because the children of today are the voters, government officials, and conservationists of tomorrow. Teaching the current and future generations about the importance of environmentally friendly practices will lead them to develop positive attitudes toward the natural world. These positive attitudes can become positive actions, and perhaps these younger generations will continue a more environmentally friendly lifestyle and contribute to a more sustainable life for them and justice for those who are currently living in an unjust situation.

Escola Vila contributes to solving the global issue of eco-injustice by teaching its students about environmental education and social justice. Students at Escola Vila participate in a variety of sustainable practices throughout their education, such as recycling, composting, and

⁴⁰ Aaron Sachs, "Eco-Justice: Linking Human Rights and the Environment," (World Watch Institute: 1995): 7.

utilizing natural rather than artificial forms of lighting and ventilation in learning spaces. The children also interact with the natural world on a daily basis through the constant presence of plants and animals on the campus, as well as through experiential learning components which are integrated into the curriculum. By offering the students a space to explore and build their own relationship with the environment, Escola Vila promotes positive environmental attitudes, which stay with the children throughout their lives. Students from Vila continue applying sustainable practices long after they leave the school, which contributes to solving the environmental issues currently affecting our planet.

Analysis of Research

Creativity at Escola Vila

Including creative activities such as drawing, music and theater into the curriculum of Escola Vila serves many functions in the development of the children's thinking skills. By having the children perform creative activities, the emotional right side of the brain is developed, helping the children use their sentiments when reasoning, instead of only knowledge⁴¹. These "learning experiences through artistic exploration lead(s) the heart and mind to naturally question daily life choices that impact sustainability"⁴². If their thinking is more in tune with their emotions, they will be more likely to allow their feelings toward nature lead them to perform more environmentally friendly actions. Exercising creativity from an early age also helps develop innovative problem solving skills. Children who have developed creative thinking will

⁴¹ Limaverde Nascimento 2008: 123

⁴² Button, Charles and Clark Barbara. 2011 "Sustainability Transdisciplinary Education Model: interface of arts, science and community (STEM)" *International Journal of Sustainability in Higher Education* 12(1): 42-43.

be able to find solutions to difficult problems life may throw their way, and as a result live with less anguish and more happiness⁴³.

Creativity is exhibited in many activities at Escola Vila on a daily basis. One of the demonstrations of creativity unique to Escola Vila is that of the *corpo* class. This class was developed to teach the children group dynamics, dance, meditation, massage and relaxation techniques⁴⁴. *Corpo* is a compliment to the physical education classes, both classes teach the students to express with their bodies but using different techniques. The class allows students to explore their relationship with themselves through meditation and their relationships with each other through collaborative group activities. Learning different meditation and relaxation techniques also help students focus their concentration⁴⁵. Students develop their creativity through *biodança*, where they can freely express themselves through dance to feel harmony with their bodies⁴⁶. The *corpo* class overall helps students express their feelings through their bodies and also how to learn with stress in a safe and productive way.

Drawing to reflect on class lessons is a common teaching technique at Escola Vila, as demonstrated through the copious student artwork decorating the walls of the classrooms⁴⁷. As a teaching technique, drawing incorporates both refining children's sensory and perception skills as well as creating work which "allows them insight into the mystery, metaphor and symbolism abundantly found in nature"⁴⁸. Children also enjoy drawing activities, which is essential in capturing their attention. The finished drawings hung up on classroom walls serve as physical

⁴³ Field Journal, page 44, Interview: Fatima Limaverde. November 24, 2011.

⁴⁴ Field Journal, page 33, Interview: Rosaline Limaverde. November 21, 2011.

⁴⁵ Limaverde Nascimento 2008: 178.

⁴⁶ Field Journal, page 13, Observation. November 14, 2011.

⁴⁷ Field Journal, page 68, Themes – Creativity.

⁴⁸ Song 2008: 15.

reminders of the lessons they have learned, reinforcing the important concepts such as respect, solidarity, and environmental consciousness.

To further develop creativity in their students, Escola Vila also includes classes in music, theater and craft making. Music classes include learning musical instruments, writing original compositions and signing⁴⁹. Music classes can also be used to reinforce concepts used in class in a creative way. For example, when the 1^o ano class was learning reading and writing through syllables, they learned the song “*Cultura*” by Arnaldo Antunes, which included rhyming two syllable words. The students wore nametags with the different syllables and would join together to spell out the words in the song⁵⁰. This activity helped the children develop their writing, reading and creative skills.

As a medium of expression, music also helps the children reflect on the values and concepts they learn at Vila. During the end of the year musical performance, two groups of students sang songs about the environment and equality⁵¹. The second group was made up of five 5^o ano boys who sang an original song reflecting the values of Escola Vila. One boy sang while his friends backed him up on the drums, acoustic and electric guitars. Some of the lyrics of the music were “*precisamos de cuidar do planeta*” (we need to take care of the planet) “*liberdade e alegria*” (liberty and joy) and “*ser igual a todos*” (be equal to everyone else)⁵². Given the space to express their feelings through music, this group of boys chose to sing about their feelings toward nature and human rights, demonstrating that the children at Escola Vila not only understand the concepts they are taught about, but also express them in their daily lives.

⁴⁹ Limaverde Nascimento 2008: 173.

⁵⁰ Field Journal, page 27, Observation. November 18, 2011.

⁵¹ Field Journal, page 35-36, Observation. November 22, 2011.

⁵² Field Journal, page 36, Observation. November 22, 2011.

Theater classes are another opportunity for students to express themselves through their bodies and voice. In theater class, children learn about group dynamics and develop their vocal expression skills⁵³. Dramatic productions not only reinforce creative thinking, but can also directly incorporate environmental education in the form of their play selections. The final production of the 5^oA class was William Shakespeare's A Midsummer's Night Dream, which mostly takes place inside the forest⁵⁴. Shakespeare's forest is a magical place where fairies play tricks on the mortals, causing the main characters fall in love. Although the play is fictional, the students were able to transport themselves to Shakespeare's enchanted forest, presenting the magic and mystery of the natural world, which is important in developing positive emotions toward the environment.

Craft making is a non-traditional art class at Escola Vila, where students make crafts out of a variety of materials. Some of the activities the children perform are crochet, fabric dyeing and painting, making wind chimes and dream catchers⁵⁵. The younger alumni remembered the craft making classes as some of their favorite classes during their time at Escola Vila. Two alumni in particular, Lucano da Rocha Tome Lobo and Iago Bezerra Pinheiro, found the craft making classes to be as enjoyable as important to their development as students⁵⁶. Through craft making the students refined their creative skills in a less academic setting.

The students of Escola Vila experience many different forms of creativity during their school days. Traditional arts classes such as music, theater and craft making help them express themselves through artistic media, reflecting on the values they have learned in class. *Corpo* classes give the children an outlet to express themselves through their bodies and work on their

⁵³ Limaverde Nascimento 2008: 177.

⁵⁴ Field Journal, page 23, Observation. November 17, 2011.

⁵⁵ Field Journal, page 43, Observation. November 24, 2011.

⁵⁶ Field Journal, page 62, Interview: Lucano da Rocha Tome Lobo. November 29, 2011.

relationships with other students. Drawing in classes helps the children reflect and analyze the lessons they learn in class, and also serve as physical reminders of those lessons. All of these creative outlets help develop the emotional side of the brain, so that positive feelings toward the environment can help guide their actions to be more sustainable.

Experiential learning components

In addition to creative activities, Escola Vila also incorporates a variety of experiential learning components into its curriculum. These experiential learning components fit into two categories, laboratories and student demonstrations. Both experiential learning activities provide the students with powerful experiences and memories which help them develop a variety of skills. Laboratory exercises are performed within school and usually fall more into the discipline of science, even though they are interdisciplinary. Student demonstrations help students explore their civic responsibilities as Brazilian citizens and are held outside of school walls. Both of these learning techniques are important in developing positive feelings toward the environment.

During laboratory exercises students explore their relationship with the natural world through a variety of activities such as gardening, cooking, and science and art projects. These exercises also allow children the opportunity to discover the plentitude of natural space they have around them at the school. Although the laboratory exercises usually can be classified as science, the exercises are interdisciplinary in nature. Laboratory exercises can include mathematics, reading, writing and the arts, which all contribute to the thinking development of children⁵⁷. The skills students learn in laboratory stay with them long after the leave Escola Vila⁵⁸.

⁵⁷ Field Journal, page 44-45, Interview: Fatima Limaverde. November 24, 2011.

⁵⁸ Field Journal, page 45, Interview: Fatima Limaverde. November 24, 2011.

Experiential learning is a preferred teaching technique among the teachers of Escola Vila. Across disciplines, teachers expressed that part of the reason Escola Vila's environmental education is so effective is due to the experiential components of the curriculum. *Fundamental II* science teacher Rono Lima Cruz believes that experience help students remember concepts better. He tries to use many experiments and activities where the students can use their senses to understand scientific concepts⁵⁹. Aurineide Almeida, 5^oA teacher, thinks that the experiential activities are the reason that the lessons learned at Vila will last the children for the rest of their lives⁶⁰. The 3^o ano teacher Elias Augusto Cavalconte agrees that the experiential components are important in making lessons from Escola Vila last a lifetime, he said simply, "*eles vivem a experiencia*" (they live the experience)⁶¹.

Every class at Escola Vila has a laboratory, but the depth and frequency of projects depend on the age level⁶². The laboratories go through eight thematic areas: fauna, flora, living pharmacy, garden, vegetable garden, orchard, health and nutrition, alternative energy and maintenance⁶³. Through these eight thematic areas the children interact with the plants and animals at Escola Vila first hand and learn about sustainable practices which they can implement into their lives. As mentioned before, laboratories are interdisciplinary and usually include a discussion, written paragraph or drawing to help analyze the experience and practice language and reasoning skills⁶⁴.

One of the main objectives of laboratory is for the children to use their hands and work with the natural world around them. Students plant the vegetation around campus as well as in

⁵⁹ Field Journal, page 19, Interview: Rono Lima Cruz. November 16, 2011.

⁶⁰ Field Journal, page 26, Interview: Aurineide Almeida. November 17, 2011.

⁶¹ Field Journal, page 21, Interview: Elias Augusto Cavalconte. November 16, 2011.

⁶² Limaverde Nascimento 2008: 183.

⁶³ Limaverde Nascimento 2008: 184-185

⁶⁴ Field Journal, page 28, Observation. November 18, 2011.

the vegetable garden and living pharmacy. From these plants, children learn how to make salads, juices, teas and home remedies⁶⁵. One of the laboratory exercises I was able to observe was the 1^o ano making tea from the sidreira plant located in the living pharmacy. Sidreira is supposed to have a calming effect on the body⁶⁶. The children picked a few stalks of the plant, smelled the leaves, took the leaves off of the stalk and then put the leaves into a pot of water. After setting the water to boil, the children wrote down the steps they had just completed to make the tea in their laboratory notebooks, practicing their writing skills. When the tea was done, each child brought their plastic cup and sampled a little bit of the tea⁶⁷.

During another laboratory that I observed in the *infantil 5A*, the students developed their science reasoning, drawing and language skills. The laboratory exercise was two sweet potatoes growing in half of a plastic soda bottle with water. Their teacher showed the children both of the sweet potatoes and had them find the similarities and difference between the two potatoes. Once they had discovered the differences, the teacher asked them to explain why the potatoes were different, some of the children answered that it could be because one of the potatoes had spent more time in the sun than the other. After observing the sweet potatoes, the children drew pictures of them in their laboratory notebooks⁶⁸. Through one activity, the children practiced scientific reasoning and their creative skills.

In addition to laboratory exercises, the students at Escola Vila also participate in civic engagement activities like putting together petitions and demonstrating for environmental and social causes. These activities show students how to use their voice for social change. Often these activities get the school press attention, which helps on two levels. Firstly, it widens the

⁶⁵ Limaverde Nascimento 2008: 184

⁶⁶ Field Journal, page 28, Observation. November 18, 2011.

⁶⁷ Field Journal, page 28, Observation. November 18, 2011.

⁶⁸ Field Journal, page 4, Observation. October 18, 2011.

recognition of the school and the work the school does⁶⁹. Secondly, it brings attention to the cause for which the school is advocating.

During my observations at Escola Vila, I was able to participate in a solidarity in transportation demonstration at the *Superintendencia Regional No Estado de Ceará*, *Departemento Nacional de Infraestrutura de Transportes* with *Ensino Fundamental II* students, teachers and staff. The purpose of the demonstration was to bring awareness toward the tremendous amount of traffic violence on the road BR 116 and asking for more security on the road⁷⁰. Students made posters with phrases like “*paz entre os motoristas*” (peace between motorists), “*seja humano ao volante*” (be human in front of the wheel), “*queremos passarelas*” (we want footbridges) and “*se bebe, não diriga*” (if you drink, don’t drive)⁷¹. They stood with their posters in front of the *Superintendencia Regional No Estado de Ceará* facing the heavily transited street BR 116, chanting the phrases on the posters and trying to get attention from cars, buses, and motorcycles passing by on the street. Many people driving by the demonstration honked and cheered, showing their support for the students and with solidarity in transportation. The attention from passersby animated the kids and they chanted and cheered more enthusiastically than before⁷².

⁶⁹ Field Journal, pages 46-47, Interview, Fatima Limaverde. November 24, 2011.

⁷⁰ Freire, Mariana. 2011 75% Das Mortes Envolvem Ciclistas E Pedestres. O Povo November 25 Jornal De Hoje sec. web.

⁷¹ Field Journal, page 42, Observation. November 24, 2011.

⁷² Field Journal, page 42, Observation. November 24, 2011.



Figure 1. The *Ensino Fundamental II* students at their demonstration in front of BR 116. Source: this research.

Alumni from Escola Vila found that their experiential learning experiences were the most memorable and influential in helping them learn about the environment and human rights. Many of the alumni that I interviewed remember their laboratory exercises clearly and mentioned them as some of the activities that helped them learn about the environment⁷³. They remembered both the laboratory activities that included making something, such as tea or juice, as well as the ones where they would play with the animals and coexist with nature, as contributing to their knowledge about the environment⁷⁴. The alumni said that the demonstrations helped them learn about both the environment and human rights⁷⁵. One alumnus in particular, Lucano da Rocha Toma Lobo, remembered several demonstrations he had participated in during his time at Escola Vila, including one for water conservation on World Water Day⁷⁶.

Escola Vila provides rich learning experiences for its students through laboratory activities and civic engagement demonstrations. The laboratory exercises allow the children to interact with nature while the demonstrations teach the children about their responsibilities to their fellow Brazilian citizens. Interviews with alumni indicate that the experiential learning

⁷³ Field Journal, pages 52, 53, 57, 60, 66 Interviews with alumni. November 28 and 29, 2011.

⁷⁴ Field Journal, pages 52, 60, 66-67, Interviews with alumni. November 28 and 29, 2011.

⁷⁵ Field Journal, pages 57, 64, 66 Interviews with alumni. November 28 and 29, 2011.

⁷⁶ Field Journal, page 64, Interview with Lucano da Rocha Toma Lobo. November 29, 2011.

components which Escola Vila incorporates into its curriculum contribute to the long lasting learning of concepts concerning the environment and human rights.

Environmentally friendly practices at Escola Vila

Environmentally friendly practices are constantly present on the Escola Vila campus. These practices are incorporated into the children's daily routines, helping make them habits later in life. Sustainable practices at Escola Vila vary from offering children green spaces to play, to using alternative methods to light rooms around campus. All of these practices contribute to Escola Vila's commitment to being ecologically conscious and to the children's first hand learning about natural world.

Sustainable practices

Escola Vila's campus' aesthetic is that of lush green plants and tall trees. During laboratory activities, the children plant a lot of the decorative vegetation on campus, as well as the vegetables in the garden⁷⁷. The trees and shrubs on campus contribute to the larger ecosystem which overall helps the planet. Most of the *Ensino Fundamental II* classrooms face a center courtyard which contains the vegetable garden, living pharmacy and several fruit trees. Through the open windows, the students constantly see physical reminders of the natural world⁷⁸.

Nature's presence is also felt in the *Educação Infantil* classrooms which have views of plants, trees and for some, the animal area. However, the children of *Educação Infantil* also experience nature in a way that the *Ensino Fundamental* students do not. The children of

⁷⁷ Field Journal, page 46, Interview with Fatima Limaverde. November 24, 2011.

⁷⁸ Field Journal, page 68. Themes – Nature.

Educação Infantil spend time everyday outside both doing educational activities and playing⁷⁹. Play is critical to children's development because, "through play children build cognitive schema, explore their understandings, question concepts and test theory"⁸⁰. By playing with students outside, they can explore their surroundings and start to build a relationship with the natural world. Escola Vila provides an ideal space for the children to climb trees, play in the sand, and play with the small *caju* fruits that fall from the tree. Alumnus Lucas Limaverde Costa Juca said that playing in trees was one of the activities that helped him learn about the environment⁸¹. The existence of plants in and of themselves is an environmental practice, but the natural space that Escola Vila offers to its students contributes to its promotion of environmental education by giving the children a place to cultivate positive feelings toward nature.

Escola Vila implements a variety of sustainable practices at the school which help save energy and reduce waste. Students come in contact with an assortment of sustainable practices throughout their days at Vila. For example, for snack, each child has their own plastic Tupperware and cups which they reuse every day⁸². Reusing the plastic Tupperware does increase the cost for water and time to clean, but it also eliminates the waste of disposing of plates and cups every day. Also, when the students have bananas for snack, instead of throwing them in the garbage, they save them and feed them to the donkeys, chickens and ducks⁸³. Instead of adding to garbage waste with the banana peels, the animals receive nutrients and no waste is generated.

⁷⁹ Field Journal, page 4, Observation. October 18, 2011.

⁸⁰ Tarr 2008:20

⁸¹ Field Journal, page 52, Interview with Lucas Limaverde Costa Juca. November 28, 2011.

⁸² Field Journal, page 31, Observation. November 21, 2011.

⁸³ Field Journal, page 7, Observation. October 19, 2011.

Some of the sustainable practices of the school go beyond activities with the students. Escola Vila tries to use cleaning products which are as natural as possible, as well as by buying their cleaning products from small businesses in Fortaleza⁸⁴. To till the soil in the vegetable garden without machinery, chickens are put into large cages with no bottom and work the soil through their own daily actions by serving as a “*trator vivo*” (living tractor)⁸⁵. Although all of these sustainable practices contribute to Escola Vila’s ecologically conscious mission, the most prominent sustainable practice found at the school is that of recycling.



Figure 2. The chickens in the *trator vivo* (left) and Escola Vila’s donkey that eats banana peels (right). Even the animals do their part in helping make Escola Vila sustainable. Source: this research.

Recycling

The concepts of conserving, reusing and recycling have been a part of the Director Fatima Limaverde’s ecological consciousness since her childhood. While she was growing up, her parents taught her to be conscious of the final destination of the materials she used⁸⁶. These lessons on consumption and waste led to Escola Vila’s emphasis on preservation and recycling. Whenever possible, Escola Vila’s attitude is to reuse or recycle rather than to throw away, which has created a marked presence of recyclable materials on the campus.

⁸⁴ Field Journal, page 41, Interview with Fatima Limaverde. November 23, 2011.

⁸⁵ Field Journal, page 11, informal interview, Morena Limaverde. October 21, 2011.

⁸⁶ Field Journal, page 44, Interview, Fatima Limaverde. November 24, 2011.

Four big, brightly colored bins stand inside the entrance of the school as physical reminders of recycling⁸⁷. The school works with families so that they understand the process of recycling at Escola Vila. Families and members of Escola Vila are asked separate their trash at home and contribute to the recyclable materials collected at the school. Products which can be reused in classroom activities and art projects are separated and the remaining materials are donated daily to the recycling collectors known as “*catadores*”⁸⁸. By working with families to understand and participate in recycling, the school shows the children that it is easy to incorporate sustainable practices at home.

Recycled goods are incorporated into life at Escola Vila through art projects, sustainable practices and classroom activities. Students express their creativity by creating sculptures from plastic bottles, Styrofoam, and newspaper⁸⁹. Tin cans are reused to make musical instruments, where students can learn about the basics of making beats and keeping rhythm⁹⁰. Other recyclable goods are used as toys in class games, such as role playing “store” where students “spend” leaves as currency and “buy” recyclable products⁹¹. Utilizing recyclable goods in fun and creative ways with the children links these materials with positive feelings instead of waste. Giving glass, plastic and paper connotations of being valuable materials instead of garbage helps creative positive attitudes in the children toward reusing and recycling.

Glass and plastic bottles are reused all over campus in sustainable ways. Glass bottles are decoratively set into walls so that they can provide natural illumination inside of learning spaces

⁸⁷ Field Journal, page 31, Observation. November 21, 2011.

⁸⁸ Field Journal, page 41, Interview, Fatima Limaverde. November 23, 2011.

⁸⁹ Field Journal, page 4, Observation, October 18, 2011.

⁹⁰ Field Journal, page 6, Observation, October 19, 2011.

⁹¹ Field Journal, page 4, Observation, October 18, 2011.

and provide a creative aesthetic⁹². Plastic bottles are also reused in a variety of ways, such as for the purpose of natural illumination by being filled with water and set into roof tiles or as bird feeders⁹³. Plastic soda bottles are also cut and painted as art projects which decorate classrooms⁹⁴. This variety of uses for bottles demonstrates the creativity of Escola Vila's attitude toward recycling.

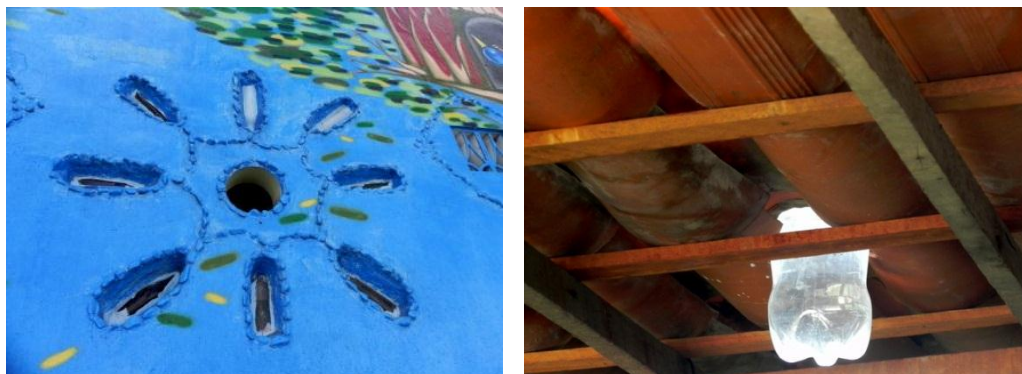


Figure 3. Examples of natural illumination at Escola Vila using both glass and plastic bottles. Source: this research.

The constant presence and innovative use of recyclable materials on campus leads to sustained positive attitudes toward recycling. Three of the teachers I interviewed listed recycling as one of the sustainable practices they employ in their lives⁹⁵. Of the alumni that I interviewed, four of them also said they continue recycling after leaving Escola Vila⁹⁶. One alumnus in particular remembers using recyclable materials to make toys and games during his time at Escola Vila fondly⁹⁷. The fact that alumni continue recycling after leaving the school shows that Escola Vila's imaginative approach to reusing materials helps instill lifelong sustainable habits.

⁹² Field Journal, page 68, Themes – Creativity.

⁹³ Field Journal, pages 28 and 31, Observation, November 23, 2011

⁹⁴ Field Journal, page 27, Observation, November, 18 2011.

⁹⁵ Field Journal, pages 20, 21, 25. Interviews with teachers, November 16 and 17, 2011.

⁹⁶ Field Journal, pages 54, 57, 61, 66. Interviews with alumni, November 28 and 29, 2011.

⁹⁷ Field Journal, page 61, Interview Iago Domingos Bezerra Pinheiro, November 29, 2011.

Sustainability at Escola Vila takes many different forms. From planting trees, to using bottles for lighting, to creating sculptures from plastic bottles, the students at Escola Vila come in contact with many sustainable practices during their school days. Recycling is the most physically visible sustainable practice at Escola Vila because of its application in creative activities, prominence around campus, and family involvement. Involving families in the practice of recycling helps bring sustainable practices full circle from the classroom to the home. Reinforcing the positive aspects of recycling helps develop environmentally friendly habits in the students which last long after they have left Escola Vila.

Human rights and solidarity education

One of the three pillars of Escola Vila's education is the relationship between man and society. To begin to explore and understand this complex relationship, the children of Escola Vila participate in various activities and projects which teach them about the concepts of human rights, solidarity and ethics. By examining the relationships between people through lessons on civic engagement, human values and solidarity, the children begin to discover that they have control over their social reality⁹⁸. These lessons are learned formally through class activities or informally through interactions between students from different backgrounds. Escola Vila provides a variety of media for its students to learn about their relationship with society and other human beings, and in turn making them more aware about their place in the larger human ecosystem.

Over the course of a school year, Escola Vila students participate in six thematic projects which teach them about human values, diversity, traditions, and other social topics⁹⁹. One of the

⁹⁸ Limaverde Nascimento 2008: 123.

⁹⁹ Limaverde Nascimento 2008: 142.

projects in particular, named “*Construindo um mundo melhor*” (building a better world) gives the *Ensino Fundamental* students an opportunity to analyze documents such as the Universal Declaration of Human rights and the Brazilian Constitution to see the differences between what is written and the reality of the world today¹⁰⁰. The *Educação Infantil* classes take a simpler approach which includes art projects and class discussions about interactions between people. The objective of the project is for the students to realize what is missing in the world today and how they can work to make it a better place.

During a *Construindo um mundo melhor* discussion in the *Educação Infantil 5A* classroom, the teacher asked the students what they felt they needed to build a better world. The class worked together to come up with the statement, “*precisamos de todo mundo não bater nas pessoas, não poluir e reciclar o lixo. Não brincar de violencia e não ter armas. Não cortar as arvores. Cuidar do mundo com paz*” (everyone needs to not beat people, not pollute and recycle trash. Don’t play with violence or have weapons. Don’t cut trees down. Take care of the world with peace)¹⁰¹. This statement shows that from a very early age the students of Escola Vila are conscious of the concepts of war and peace and how those concepts affect the world. In that short statement the children have included themes of the environment, human rights and anti-violence, all of which are major concepts in Escola Vila’s curriculum.

To teach the students about their rights and responsibilities as citizens of Brazil, the *Ensino Fundamental* students write letters to their government asking for social change in a variety of areas. The 5^o ano A class received a response to one of their letters to the Brazilian President Dilma Rousseff, from Elisa Smaneoto from the office *Gestão interna* (internal

¹⁰⁰ Limaverde Nascimento 2008:164.

¹⁰¹ Field Journal, page 3, Observation, October 18, 2011.

management)¹⁰². The letter thanked the children for their letters to the President concerning pressing issues in Brazil today. Part of the letter also applauded their teacher for awakening their interest in politics and making Brazil a better place. While they read the letter, the children smiled and cheered. Part of the letter read, “*o Brasil que desejam esta nas suas mãos*” (the Brazil you desire is in your hands), which links with the idea that the children have control over their social reality¹⁰³.

Another major theme ever present on the Escola Vila campus is that of solidarity. In the year 2011, Escola Vila received recognition for its focus on solidarity with the “*Selo Escola Solidaria*” (seal of a solidary school)¹⁰⁴. The *Selo Escola Solidaria* is awarded by the *Instituto Faça Parte* with the *Ministério da Educação, Conselho Nacional de Secretários de Educação, União Nacional dos Dirigentes Municipais de Educação*, the United Nations Educational, Scientific, and Cultural Organization, *Organização dos Estados Ibero-americanos* and the United Nations Childrens Fund. To receive the *Selo Escola Solidaria*, a school must exhibit leadership as a center of citizenship in the community and exchange experiences with other solidary schools¹⁰⁵.

At Escola Vila students learn about unity and helping out their fellow man from an early age. During an exercise with the *Infantil 5A* class, the teacher asked the children how they would define solidarity and they responded, “*ser legal com as pessoas*” (be cool/good with people) “*doar brinquedos*” (donate toys) and “*cuidar a natureza e as pessoas*” (take care of nature and

¹⁰² Field Journal, page 34, Observation, November 22, 2011.

¹⁰³ Field Journal, page 34, Observation, November 22, 2011.

¹⁰⁴ Field Journal, page 47, Interview Fatima Limaverde, November 24, 2011.

¹⁰⁵ Instituto Faça Parte. “Selo Escola Solidaria.” <http://www.facaparte.org.br/selo-escola-solidaria/> (accessed December 6, 2011).

people)¹⁰⁶. These responses indicate that the children understand solidarity as taking care of their fellow world citizens, as well as taking care of nature. The last answer in particular indicates that the children understand that there is an important relationship between people and nature and they need to be solidary and take care of both of them.

To further promote the concept of solidarity, Escola Vila works to have a good relationship with the greater Fortaleza community. Students from the school are taken to play in sports tournaments against schools in the community, promoting good sportsmanship and fraternization between the youth¹⁰⁷. The community is also invited to events at Escola Vila¹⁰⁸. Inviting the community participate in activities the school sponsors helps disperse the values and messages the school tries to teach its students to a wider audience.

The themes of human rights and relationships between people are still very present in the alumni's memories of Escola Vila. Most of the memories about human rights that the alumni shared had to do with the informal learning of interacting with other students in the classroom. One alumnus in particular, Lucas Limaverde Costa Juca, remembered that he was constantly switching desks and interacting with all of the students, which contributed to him learning about relationships between people and listening to all different types of opinions¹⁰⁹. Another alumnus, Lucano da Rocha Tome Lobo, remembered that the teachers never demonstrated any discrimination in the classroom¹¹⁰. Both of these observations on human interactions show that students learn as much about human relationships and rights through class projects as through their daily classroom interactions.

¹⁰⁶ Field Journal, page 6, Observation, November 19, 2011.

¹⁰⁷ Field Journal, page 47, Interview Fatima Limaverde, November 24, 2011.

¹⁰⁸ Field Journal, page 47, Interview Fatima Limaverde, November 24, 2011.

¹⁰⁹ Field Journal, page 52, Interview Lucas Limaverde Costa Juca, November 28, 2011.

¹¹⁰ Field Journal, page 64, Interview Lucano da Rocha Toma Lobo, November 29, 2011.

Solidarity is also a theme which is still very present in the alumni's memories of Escola Vila. Alumnus Iago Bezerra Pinheiro remembers solidarity at Escola Vila best through an experience he had helping out a member of the school community during a difficult time. Iago remembers bringing food and materials to the school to give to "Tio Chico" when his house was damaged by rain¹¹¹. This memory of helping out a member of the community without expecting anything in return falls directly in line with the definitions the alumni gave for solidarity in their interviews. Every alumnus included something about helping out someone else without needing anything in return¹¹². Seeing that the alumni's definitions for solidarity were remarkably similar shows the continuity and efficacy of Escola Vila's lessons on human rights and solidarity.

Teaching Escola Vila students about the importance of respecting human rights and solidarity contributes to creating a more empathetic world community. The values the school teaches like respect and solidarity give the children a heightened awareness about what is right and what is wrong, so that they can identify when something is unjust and work to make it right. When these values are combined with environmental education, the children can see how degradation of the natural world is an injustice and needs to be prevented.

Conclusion

The children of this generation and future generations are facing several substantial environmental issues and must be prepared to come up with creative solutions to solve them. Escola Vila's educational model which incorporates environmental education develops their student's ecological consciousness and their creative thinking to help combat this global issue. The four learning components that Escola Vila incorporates into its curriculum: creativity,

¹¹¹ Field Journal, page 60, Interview Iago Domingos Bezerra Pinheiro, November 29, 2011.

¹¹² Field Journal, pages 52, 53, 57, 61, 64, 67 Interviews alumni, November 28 and 29, 2011.

experiential learning, sustainable practices and human rights, all contribute to the efficacy of its environmental education. These four learning components work together to create an educational model which the Director of Escola Vila, Fatima Limaverde, believes meets the needs of her student's generation¹¹³.

Each one of the four components contributes to the student's development in a different way, but they all contribute and play off of each other. Artistic projects help the children of Escola Vila express themselves creatively so that they can begin to tie their relationship with nature to positive emotions. Experiential learning activities teach the children about the natural world through experiments and demonstrations. By combining the knowledge the children learn in their experiential learning activities and the emotions they learn from creative activities, the children can make decisions using both their hearts and heads. Experiential learning activities also help the children create memories about their actions, which leads to the development of long lasting environmental habits. Sustainable practices on the campus range from reusing plastic Tupperware for snacks to using glass bottles as natural lighting to planting trees on the campus. The presence of these sustainable practices at the school show children what kinds of practices they can implement into their own lives and also provide a green space for the children to develop positive emotions toward the environment. Teaching the children about their responsibilities as citizens of the world helps them learn the difference between actions that are just and unjust. By understanding the concepts of human rights, empathy and solidarity, the children will be able to recognize what is wrong in their lives and work to make it right.

¹¹³ Field Journal, page 47, Interview Fatima Limaverde, November 24, 2011.

These four learning components help develop the children of Escola Vila into creative, ecologically conscious thinkers who are prepared to address the environmental issues facing their generation and generations to come.

Considerations for further research

Brazil faces a variety of environmental problems, such as deforestation and species endangerment. There are many possible solutions to these problems, but for lasting environmental change to occur, the people of Brazil must be aware of their impact on the environment. Although Escola Vila is notable for its achievements in environmental education, it is just one data point on the large spectrum of Brazilian schools. More research needs to be done in the area of environmental education across Brazil, to see if Escola Vila is far in front of its peers or if it is reflective of a growing national ecological consciousness in Brazil.

Many factors of this study restricted potential data collection, which could add depth to future research. One of the main restrictions was the time period during which this study was performed. Both because of the short duration of the study and the fact that I was observing the last weeks of the school year, I was not able to observe all of the classes and projects to give a complete understanding of Escola Vila's curriculum. Future researchers could start observing earlier in the school year so they could observe examples of each laboratory theme and the different Escola Vila social projects. More observation time would result in a richer body of examples in each of the four environmental education learning components as well.

A facet of this project which could be more deeply explored is that of recycling at Escola Vila. More research could be done into the amount of recycling that comes into the school each day, as well as how much of the materials that come in are reused at the school and how many are donated to the *catadores*, what types of recyclable materials are most commonly brought in, and how the school works with families to teach them about recycling.

The availability of alumni limited the amount of them I was able to interview. I found the group of six through my key informants Fatima Limaverde and Iago Bezerra Pinheiro, but if I

had more time and resources I would have reached out further into the alumni community. The six former students I was able to interview provided excellent information for my study, but they cannot and do not represent all of the alumni of Escola Vila. A few of the alumni mentioned that there are students who leave Escola Vila and never implement sustainable practices in their lives or participate in civic engagement activities again. Including the perspectives of these students is critical in giving a complete report on the efficacy of Escola Vila's environmental education and should be explored in future research.

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Appendix

1. Could you have done this project in the USA? What data or sources were unique to the culture in which you did the project?

I would have been able to do a project similar to this one using a school in the United States which promotes a similar type of philosophy, but I would not have been able to do a project on Escola Vila from anywhere else but Escola Vila itself. Although interviews with alumni and Fatima could have been performed from the United States via the internet, the classroom observations provided the critical information for which the interviews gave necessary context and perspectives to analyze the different pieces of environmental education. Interactions with the children and teachers could not have been replicated, which would have resulted in a less rich set of examples from which to draw conclusions about the environmental education model of Escola Vila.

2. Could you have done any part of it in the USA? Would the results have been different? How?

If I had found a school in the United States which followed a similar pedagogical model I could have performed a similar research project. I would have been able to observe classes, interview alumni about their experiences, and assess their sustainable practices. However, some of the environmental implications would have been different because each country faces its own environmental challenges. Escola Vila teaches about environmental and human rights issues on both a global and local level. On the local level, students learn about environmental and human rights issues in both Fortaleza and Brazil as a whole. The environmental and human rights facing Brazil are different than those facing the United States or other countries, so the implications of teaching children about these issues will be different.

3. Did the process of doing the ISP modify your learning style? How was this different from your previous style and approaches to learning?

Throughout my college experience I have taken several science classes that included labs, which provided the experiential component of learning. I feel like experiencing and exploring concepts helps me learn them better. Through my project I was able to talk with teachers, students and staff about their experiences and experience many school activities myself. The Escola Vila pedagogical model also includes experiential components, reinforcing the idea that experiences help you learn. Working on this project validated my choice to go on an SIT program that incorporates experiential learning components.

4. How much of the final monograph is primary data? How much is from secondary sources?

I would say that the great majority of my paper is primary data. My interviews and classroom observations yielded many great insights and examples which I used in my paper. The second source I cited the most was Educação Bio-sustentável, Eco-sistêmica E Transdisciplinar – Uma Prática Da Escola Vila by Patricia Limaverde Nascimento because it provided me with the philosophical framework of the school and gave me more specific information about the projects and activities in the curriculum. Journal articles helped me with the background information on environmental education and also to justify conclusions from my classroom observation.

5. What criteria did you use to evaluate your data for inclusion in the final monograph? Or how did you decide to exclude certain data?

To guide me in picking data to include in my final monograph, I classified my data into major themes and sub themes. This is why I found color coding my field journal extremely helpful. It helped me organize my data and highlight the specific examples of each theme and sub theme.

6. How did the "drop-off's" or field exercises contribute to the process and completion of the ISP?

These field exercises mainly helped enhance my observation skills. Each experience has so many components, it was important to observe many different situations to focus my observation skills to information necessary for my problem statement. Even though I did not perform very many interviews prior to my ISP, talking with people during the field exercises helped me feel more comfortable formulating and asking interesting questions.

7. What part of the FSS most significantly influenced the ISP process?

The part of the FSS class which was most helpful to my ISP process was discussing our problem statements and refining our research focus. Often when starting a project, the objectives can be quite ambitious, and I felt that after discussing my problem statement in class there were some parts of my problem statement weren't as important to pursue and that there were more pertinent questions I had not explored yet.

8. What were the principal problems you encountered while doing the ISP? Were you able to resolve these and how?

One issue that I coped with was the ethical issue of working with children. The rules for interviewing minors are extremely strict, so I tried very hard to stay out of any situation that could be seen as an interview with a child. When I did ask children questions, I kept my notebook closed and recorded general observations rather than direct quotes in my field journal after our conversations.

9. Did you experience any time constraints? How could these have been resolved?

Due to the timing of the ISP period, the main part of my research took place during the end of the school year. Because of this timing conflict, I was not able to observe as many classes as I had originally set out to do. However, community projects week was extremely helpful because it was far enough away from the end of the year that I did not run into the problem of observing so many evaluations and other wrap-up activities. Despite these timing issues, I was also able to attend the 30th anniversary party and the end of the year party, which were important events in my research, only because my project occurred at the end of the school year.

10. Did your original topic change and evolve as you discovered or did not discover new and different resources? Did the resources available modify or determine the topic?

My topic stayed fairly consistent from my initial proposal into the final ISP proposal. There were a few modifications to account for time constraints and my changing interests in the subject. Also after reading the book Educação Bio-sustentável, Eco-sistêmica E Transdisciplinar – Uma Prática Da Escola Vila I I knew more about the theoretical elements of the Escola Vila educational model and was able to focus my research into specific themes.

11. How did you go about finding resources: institutions, interviewees, publications, etc.?

Bill Calhoun first put me in contact with Iago Bezerra Pinheiro, a young alumnus of Escola Vila, and Iago took me to visit the school and meet with the director Fatima Limaverde very early on in the semester. After making this initial contact with the school, I researched a little more about it and decided to do my ISP there, and then I met with Fatima once again with Iago. During the ISP period when I was collecting my research at the school, Fatima introduced me to teachers and former students who work at the school. Iago also helped me find alumni to interview. As for publications, I used the book Educação Bio-sustentável, Eco-sistêmica E Transdisciplinar – Uma Prática Da Escola Vila which Fatima gave to me and other articles from the internet.

12. What method(s) did you use? How did you decide to use such method(s)?

My primary method of data collection was classroom observation. Classrooms provided necessary data about class projects, activities, lessons and interactions. Formal and informal interviews were also very helpful in collecting data. I used both formal and informal interviews for teachers and only formal interviews for the alumni and the director Fatima. I preferred formal interviews to informal interviews because I found that I was able to extract more useful information from the formal interviews.

13. Comment on your relations with your advisor: indispensable? Occasionally helpful? Not very helpful? At what point was he/she most helpful? Were there cultural differences, which influenced your relationship? A different understanding of educational processes and goals? Was working with the advisor instructional?

My advisor was the director of the school, Fatima Limaverde. However, I would say that Fatima took more of a key informant role than an advising role. Fatima facilitated trust between me and teachers and students when she introduced me to the classes I was going to observe every day. She also gave me a list of alumni who worked at the school for me to interview, in addition to introducing me to one in particular. Fatima also provided essential information to my project during our interviews, but she never looked over my problem statement with me or advised me on my project. As a key informant Fatima was indispensable, but I found guidance for my project from other sources.

14. Did you reach any dead ends? Hypotheses which turned out to be not useful? Interviews or visits that had no application?

There were a few days of observation which did not yield many new insights or examples of themes for my projects but I wouldn't classify any of those as dead ends. Every day at Vila I built trust with the school community and was able to solidify my relationship with them, which eventually lead me to new insights for my ISP.

15. What insights did you gain into the culture as a result of doing the ISP, which you might not otherwise have gained?

The main cultural differences that I learned about were the differences between teaching styles in the United States and Brazil. Although teaching styles greatly differ from school to school in the United States and Escola Vila is not necessarily representative of Brazilian schools in general, I observed a few cultural differences in the educational systems of the two countries.

Some examples of these differences are only having classes in the morning or afternoon and not switching classrooms to go to different classes.

16. Did the ISP process assist your adjustment to the culture? Integration?

By the time I performed my ISP I would say I was fairly adjusted and integrated into the Brazilian culture. Escola Vila is also very similar to the schools that I attended in the United States in aspects of the campus, the classes offered and the fact that it was a private school, so I did not experience any culture shock while working at the school.

17. What were the principal lessons you learned from the ISP process?

Firstly, patience in building trust with the community. During community projects week some teachers were hesitant to speak to me and let me observe their students, however once I was in my second week of ISP research, many teachers would smile and greet me kindly. Secondly, how important honing my language skills is, I had quite a few misunderstandings in both Portuguese and English. None of the misunderstandings were serious, but they did cause some frustrations at the time and could have been avoided. Also, I gained some clarity as to how much I enjoy being with children and teaching. Although there were some moments when I wouldn't have wanted to be the teacher (ex- tantrums, fights between students), the children showed me time and time again how much they have to offer the world and I want to make sure that every child can achieve their potential.

18. If you met a future student who wanted to do this same project, what would be your recommendations to him/her?

I would recommend that before starting research at the school they read Educação Bio-sustentável, Eco-sistêmica E Transdisciplinar – Uma Prática Da Escola Vila by Patricia Limaverde Nascimento. It is a book all about the pedagogical model and work of Escola Vila. I found it extremely helpful to have that background information into both the theory and the practice of the school. Although it is all in Portuguese, the language is clear and simple enough to understand a lot of it without a lot of dictionary assistance.

19. Given what you know now, would you undertake this, or a similar project again?

Absolutely! Working on this project showed me how important environmental education is to the future of our planet and I would love to work on another project related to this topic, perhaps even comparing environmental education in the United States and Brazil.