

## **The project documentation: A process of metacognition with 11-year-old students**

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*It's easier for a snail to leave traces of their way, their work, than a school or a teacher to leave a written record of his acts or work. Documentation is an issue of mutual trust and mutual esteem. In some Western countries it is considered inappropriate or even damaging to interfere with the rights of anyone. We do it because it helps us better understand the children and allows us to reflect on our own work. -*

Loris Malaguzzi, 1989

### **Introduction**

There are few social applications of the constructivist theory approach of Reggio Emilia directed at older elementary children. Although we have a theoretical and philosophical foundation, as well as guidelines to follow in our daily lives, we still have a long road ahead as we begin to implement this philosophy.

Documentation is an essential part of a teacher's daily work. It gives us the opportunity to professionalize our work and allows us to understand not only what children do but also what we as teachers plan and propose to do with our students day to day. This often leads us to find meaning in our profession.





In general, we tend to confine the work of documentation within the functions of a constructivist teacher; however, documentation would not exist without the participation of children, who with the individual skills of different stages of life can make this work possible. The work undertaken in this project suggests and invites each teacher to leave their mark of their daily labors, by involving students in this effort and working together.

### **Cognitive development of children of 10 and 11 years**

According to Piaget, children this age are at the stage of concrete cognitive operations. They cease to be egocentric and can use mental operations to solve real practical problems of the here and now. In this period, children are able to think logically because they take into account multiple aspects of a situation instead of focusing on just one.



Regarding moral development, Piaget says that children in the operations phase possess a concrete morality of cooperation, which is characterized by flexibility as they take into consideration different points of view before making judgments, thus begin to formulate their own moral code.

We may conclude that in this developmental stage prior to adolescence, children 10 and 11 years of age develop a deep awareness of themselves and their actions, which is key to building self-awareness and age-appropriate self-esteem and being able to translate their thoughts into action.

Carlina Rinaldi, a Reggio Emilia educationalist, said: "One of the keys of Reggio's philosophy is the image of a child experiencing the world, which becomes part of it from the time of birth, full of curiosity and zest for life. A child who is filled with the desire and ability to communicate from the beginning of his life, fully capable of creating guidance maps for personal, social, cognitive, emotional and symbolic behaviors. Because of all this, the child responds with a competent skills set, learning strategies and ways of organizing relations. "



### **Role of teachers in project work**

After working several years with students of this age and having understood the value of documentation, we were interested to discover how children of this age are able to develop an awareness of their environment and of processes and learning skills, as well as encourage children to develop a social and environmental awareness put it into action, and apply it within the community. This was the central concept for the project of learning sustainability of the school year 2008-2009 in the fifth grade group.

Conscious of the potential of each student, we started the project by choosing experiences, in conjunction with the workshop leader, which were related to this concept. This exchange of views between professionals of education is central to the work of documentation and monitoring group projects.

The pedagogy of listening, a fundamental principle of social- constructivism, is a process where there is interconnectedness between the teachers and children. This takes into account the point of view of the young to generate their class initiatives in relation to their experience and the co-construction of identity and knowledge, a relationship where the listener is a metaphor for availability to listen and be heard; where they speak various points of view; differences and commonalities; and where the adult gives children the leadership and power of their voice and of a hundred languages.



### **Beginning of the project / Preparation of the chair**

The documentation of the processes that are observed is one of the fundamental purposes of the work of adults. Malaguzzi says children who are waiting to be seen, without a theater, without an audience, will be lacking and that something similar happens to teachers, who also expect their work to be seen and recognized. In this way, documentation becomes a living memory and a shared process which is visible to the children, which focuses so much on the final products. The workshop owner shared with the group various forms of artistic expression using recycled materials, among these were tires. They

also were led to different areas near the Institute where there were discarded tires. From this experience emerged children's interest to make a chair with reused materials that were found near the Institute.

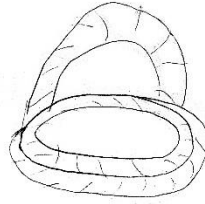
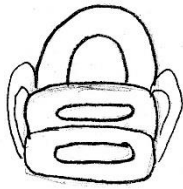
*We went to the park and there we found a tire and wondered what we could do with it? We took it back to room and thought about it. We washed and cleaned it and we had several ideas but not everyone agreed on them.* - Lizeth, 10 years



*Laura, our art teacher told us about everything that could be done with the tires that could no longer be used, and how to prevent contaminating the environment. So we decided that we wanted to do something useful with tires that did not work.* - Ana Cecilia, 11 years

These questions and decision making, denote a series of processes that demonstrated the ability of children 11 years old to resolve conflicts and transform their environment and surroundings by building their own concept of social and environmental awareness.

*We made several sketches of designs for armchairs and saw pictures that gave us ideas. After much thought, we agreed to make a chair, because it would be a very useful and simple thing for us to make.* - Anna, 10 years



*Once we decided on the design of the chair, which was the aurora borealis, we looked for all necessary materials and found it at the school. - Lizeth, 10 years*



In recounting the experience of group selection and organization, children prove that they are aware of their learning processes and also show the simplicity and enthusiasm with which they face the challenges posed.

As Rinaldi said: "We should listen to children so they can express their fears, but they also give us the courage to face our own, by and through them they give us comfort, wisdom, so that their "why" can guide us in our search for the reasons and give us the strength to find non-violent responses, to be



honest and responsible, and gives us the courage for the future and will help us find a new way to talk with them and ourselves.”



Having decided on which product to make, the children began to work at achieving their goal: to make a sustainable chair. While making the chair, the interest and enthusiasm of the children was sustained from beginning to end. In order to make this system possible were critical relationships between students, teachers, adults, background and knowledge, which helped the process of developing a "sustainable armchair." During this time, they generated discussion and dialogue processes, listening, sharing opinions and decisions, in addition to problem-solving skills, work in equipment, research, organization of work, appropriate relationship with adults and the use of various tools (drill, screws, industrial stapler, yarn, needles) to achieve their goal.



At this point, for children the preparation of chair was just a challenge and an interesting activity associated with the project within the art studio. It was only when it was decided that the chair could be

part of the exhibition for the Institute at the Recycling Fair organized by the SEMARNAT that the experience gained greater significance for them (the school and society united in building a new childhood culture).



At this point I watched as the children took over their learning processes and applied them to real solutions and real conflicts. Their level of commitment and developing skills increased, with different attitudes and knowledge. The goal then became to help the group develop their own processes of documentation of their work in an effort to generate a deep reflection of themselves and their actions.

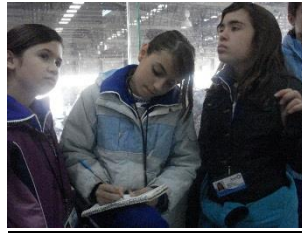
Within the Reggio philosophy, the starting point of research and documentation that teachers make from the children in their group is that of curiosity; to learn about them and their processes with an open mind in search of patterns and behaviors, and even to know why a group of children is moved and what issues they find interesting.

This data (including interviews, descriptions, photographs, videos, works of children, etc...) establishes the elements of "pedagogical documentation."

Documentation is to think, learn and make visible the negotiable interest of children, and allows a professional level reflection to share in the teaching team: parents and teachers. Feedback is received from the various participants, children, parents, teachers, and pedagogy. This democratic process allows education to take shape.



The documentation aspect studied internationally is one of the foundations or pillars of the Reggio project, the systematic collection of processes of education by Malaguzzi. This kind of credit or testimony gives culture and identity to each school and those who inhabit it. The documents are the tests that make respectable work with children and giving dignifying memory and historical consistency.



### Visit to TAMUX

Along with the work of preparing the chair in the art workshop, we carried out different activities with children, aimed at developing environmental awareness. One of these was the visit to the Museum of Natural History TAMUX, Tamaulipas in Ciudad Victoria. This impacted the children due to the assembly of the various pieces and how they presented the history of the Earth.

During the visit the children discovered that the top predator of our planet is man and began to wonder about what could be done to have more people join in to care for the environment and create a more sustainable home.



Part of the rooms of the museum is that of sustainability, which has made proposals for the care of the environment. In this room the children shared with the museum guide who worked in the development of the "sustainable chair" and she invited them to exhibit it at the museum.

*TAMUX is a geological museum in Tamaulipas, more than anything it is an interactive museum with interactive rooms and it also promotes sustainability. I liked it and learned many things. In addition, the guide asked us to show the chair. - Maria Jose, 12 years*



*TAMUX is a really big, cool and entertaining museum; I would recommend it a lot. The thing I liked most was that I learned who the destroyer of nature is and it is us. This visit helped us know how the museum was assembled, and the music was also helpful. - Sofia, 11 years*

*The thing I liked best was how the rooms were made ... This visit helped with our project because the guide gave us the idea of presenting our couch in various museums. - Lizy, 11 years*

*TAMUX is a great museum that tells the story of the geological ages; we saw many halls such as the Cosmogonic, Archaic, Paleozoic and Cenozoic Antropozoica Ages. I liked the Cosmogonic Age. It was awesome! It helped to inspire us to learn more about sustainability. - Vivian, 11 years*

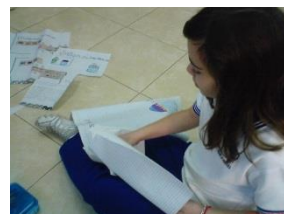
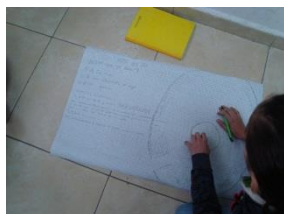


*By going to the sustainability room and seeing the activities that were there, we told our guide about our couch and she liked it so much that she invited us to exhibit the chair in TAMUX. The thing I enjoyed most was that I learned many things but in a fun way. I liked the museum because it wasn't boring, and it had very fun activities. - Ana Lucia, 11 years*



It was after this proposal that the interest of children to share their work with TAMUX museum arose as they began to prepare this presentation. I proposed they make a sketch of how they would like to mount their chair. Once we had the first sketches, the children worked on a final draft that included the best part that each team had contributed. Through this activity the group was able to discover the importance of teamwork focused on the common goal as well develop the ability to synthesize information.

The initial sketch of the exhibition shows us that, "Children have no boundaries; they have the ability to imagine and plan as far they can go as they increase their learning."





### **Development of the exhibition / Need to document**

As time passed and an expert advisor visited their exhibitions, the children realized that the best option would be to find a museum in Monterrey to showcase their work and to make an impact in society about environmental care.



This conclusion of the group makes clear how the interaction with other people, such as museums or expert advisors, help the children to set actual goals with real contexts and gives a greater impact than on what happens solely within the schools, as well as to take an active role in creating change in their society.

Documentation is an ethical strategy of Malaguzzi which provides a voice to the child, and restores a public image of the city which shows the city is investing in its schools. It is also an aesthetic strategy because the records have standards of important aesthetic quality. It is also a political strategy because it offers the city an international image of the city itself.



Once the children took the decision to exhibit their work in a museum, they realized that it was necessary to support their proposal and organize information which would include and interpret the activities carried out, i.e., documenting their project and what they learned.

*When we thought about making this chair, we realized that it could help the environment but we had to lay the foundation.* - Ana Cecilia, 11 years

*With the help of our teacher we decided what research questions were related to environmental awareness and tires. We used references such as books, magazines and the internet to get information, and then some of the mothers of the group helped us summarize and explain it better.* - Ana Lucia, 11 years

Documentation provides the child a possibility of self-worth, a way to understand and make sense of their actions, a right to reflection, a memory, the right to not be locked into a single interpretation, and possibility of seeing and metacognition (Rinaldi 1996) .



With respect to metacognition, Bruner explains that in this form of mental activity, the object of thought is the thought itself. Metacognition makes arguments about the nature of reality in cognitive arguments about what we know. While the contrast and comparison can raise awareness about the relativity of knowledge, the object of metacognition is to create alternative forms of reality. In this sense, metacognition provides a reasonable basis for its own interpretation of meanings, a way of achieving mutual understanding even when negotiation fails to reach consensus.

Students were engaged in preparing the documentation for their project, and were next to their "sustainable chair." They spent time answering questions about where the materials came from as well as their research on pollution, the use of tires and sustainability. Two mothers of the group worked on putting together the information found.

*Ivan and Adrian's mother helped us choose which information was most important and how to summarize it. I would like to thank them because without their support we might not have been able to finish this work.* - Ana Lucia, 11 years



Documentation, as Rinaldi stated, offers families the opportunity to see the words of their children, to observe how they progress, to understand the child who is their own. It is also an opportunity for dialogue, discussion and confrontation, and the possibility of recognizing the child from real perspective. It's an opportunity to be participants in the events that occur in schools and to adopt a new cognitive approach.





The children developed the explanation of the procedure for building the chair and included images in this process. This activity involved the organization of the steps that were carried out while preparing the chair as well as the selection of photographs that represented this process.

This is how children described the preparation of the chair:

1. Wash the wheels inside and out.
2. Children joined the tires but had difficulties because they could not pierce them.
3. Once the wheels were joined, they took measurements and laid the wood to cover the holes above and below the chair. They also placed a piece of mesh for protection at the bottom.
4. While the children were arming the couch, the girls worked on the design. They chose the fabrics and agreed with the other children to cut out shapes that everyone liked.
5. We measured the tires to place the carpet backing. At first we could not but we made some cuts and then placed it around the tire.
6. The whole group was dedicated to sewing chair and the design of it, with buttons and shapes. We also sewed shapes on the whole side of the tire.
7. After making the sewing design, we split into groups and one group began to make the seat with sponges and wire.

8. Once the design was sewed we made a sheath. Some adults helped with this step as a sewing machine was needed.

9. Since the sponges were attached with wire, tape was used to strengthen it and was wrapped several times. We then took steps to make the case, which was made with denim fabric.

10. In the end, we placed the strip of color to decorate the chair. Now it was ready for presentation at the recycling fair.



The Institute also worked with children in organizing this information graphically, in three panels that included photographs which represented their research and the development of the chair.



*We went with Emy to make the panels that were going to be put in the Planetarium ALFA. This helped our project because we were able plan what we wanted to with the aid of others because we would not have been able to do such a great job. I am grateful to Emy. - Adrian, 11 years*

*With the help of Emy we were able to organize information and photos to prepare for the panels of the exhibition of the chair. Emy was very helpful and with her help we were able to complete our project. -*

Ana Paola, 11 years

*We went with to the computer lab with Emy and worked on what we investigated and we put the photos on the panels. Emy helped us put the photos we wanted on the panels and I would like to thank her for helping with the work. - Ana Cecilia, 11 years*

In reality documentation is a visualization process of a social construction in which we select what we consider to be valuable to document. The meaning and significance of documenting not only arises from observation. It is always an act of interpretation in the fact that the document - autobiographical film, is a process. It is a choice.

We, ultimately, co-construct and co-produce the documentation as participating subjects. There is never a set in stone path to follow. Therefore, when we document, we are co-builders of the lives of children. (Dahlberg, Moss and Pence, 2005)

Through these activities, I noticed that the motivation of the children was consistent from start to finish and they gave their best effort in each process of the documentation. I also noticed the children were concerned because of their writing, spelling and punctuation; everyone helped develop the sketch of the exhibit by working together, they managed to bring together the best of each student and this resulted in democratic attitudes, which were associated with their classmates and adults (mothers, Institute and Museum staff); they investigated using various sources such as a dictionary, bibliography and online

articles; and surveys were also carried out by Institute staff to gather information on the materials used to prepare the armchair.

Pedagogical documentation refers to the process of making our practice visible, and this was precisely the objective of the group as they prepared their presentation. They generated interest and awareness in society about taking care of the environment by showing what they had discovered, and with much effort and dedication they succeeded.



The documentation of Reggio Emilia makes meaning of the experiences that children have. It collects and rescues the meanings that are felt through an interpretation (the experiences that make the children who they are). It is therefore always a meta-interpretation, which allows time for reflection. Recognition means, above all, trying to understand the meaning of different events, making and demonstrating how children build relationships and seek an awareness of self (Rinaldi, 1995). It establishes a link between thoughts and real meaning, increasing the number of possible interpretations. This is why documentation feedback allows a better and improved way of thinking and interacting with others. It

helps us to choose the project roads, creating context, and at the same time, welcoming and challenging the children.

From the point of view of documentation as a metacognition, we found that children at this stage of cognitive development are able to interpret and reinterpret their own learning processes becoming part of the construction of the documentation process. Documentation is then a joint experience between students and teacher.

### **Installation of exhibition / school to museum**



We understand that the school has an important role in forming the citizens of tomorrow, we have the responsibility not only to transmit knowledge but also of being an agent of change in the reality in which they operate. However, this work is not isolated to what is happening in our environment, hence the importance of building and establishing links and relationships with institutions such as museums.

As group leader I set about contacting Universities and Museums to open their doors to present our work. ALFA Planetarium (Museum with a scientific inclination) was the Museum where we showed our exhibit. The children mounted it and it consisted of three panels with the documentation which was prepared by the group along with the "sustainable chair." This remained available for viewing during the month of June in the lobby of the Museum.



*It was really cool to go to ALFA to see the exhibition and we had a great time. When we arrived a man at the entrance told us: "Who are you?" And I said, "we are the children who made the chair, we're famous", then he let us through. We went and greeted the museum director and everything there was very cool. - Ivan, 11 years*

*When I arrived at ALFA we put down the chair and the panels. Ivan and I carried the chair but it slipped a lot because of the mosquito net. When we arrived, we left the chair in sustainable workshops and we presented it to Angelica and museum director. They saw the chair and told us what we could do to improve it, and then we thanked them and left. - Bruno, 11 years*

After the museographer helped organize the exhibition, the children gave their point of view.

Sofia: I think the chair should be in the middle.

Museum director: Do you think so? This way people wouldn't understand the panels as well.

Sophia: The chair is most important thing, and we should draw attention to it.

Bruno: Yeah, but then you cut the panel information.

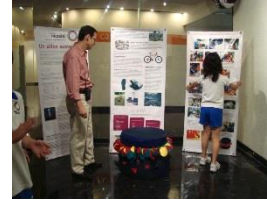
Museum director: (watches and allows them to move the pieces).

Ivan: It is best left in the edge because people are going to read the information first and then go to see the end result which was the chair.



Bruno: Yes, you will sit down without knowing what it really is.

Sofia: Well, then help me move it.



This exchange of views brings new evidence of the ability that children have to find practical solutions with real problems, generating proposed solutions and engaging in discussions to reach decisions as well as awareness of their processes and what they want to accomplish with their exhibition.

For Carla Rinaldi and Veia Vecchi, documentation becomes an area of development in which we take our child's image and make it public. Documentation establishes a new point of view about our work.

The staff of the museum allowed children to actively participate in the project, which gave value to their efforts that emerged from the initiative.

Documentation can provide children and adults alike authentic moments of democracy. It is a democracy which is rooted in the recognition and visualization of the differences produced by dialogues. It is a question of values and ethics (Rinaldi, 1995).

**Exhibition / Final Product**

Parents, students and teachers attended the museum to see the exhibition and understand the documentation process in a formal way and to give thanks to ALFA for their support.

*We presented our sustainable chair to ALFA and to our parents for the first time. I liked that our couch was in the Planetarium and I was very happy and satisfied with the chair. I think our work can help people to not pollute.* - Vanessa, 12 years



*What I enjoyed most was that my parents were able to see the chair and they were happy and said they liked the chair we made. I am happy and proud of the work we did and how the panels turned out, I feel very happy about it. I hope people are more aware that garbage can be used to create new things and look cool too.* - Lizy, 11 years



*Parents went with us to see our chair and they loved it, I too was really excited at how cool it looked. Our parents congratulated us, said it looked cool and was very comfortable. I also liked that fact that we were going to be having a contest using sustainable furniture. I am proud that more people will be able to see our chair, and this will help take care of the planet.* - Ana Lucia, 11 years



*I feel very happy about the work we accomplished and the work Angelica and the museum director did as well. I'm super satisfied. Our work can help make a sustainable world because people who see it will know we need to keep our world clean. - Ana Cecilia, 11 years*

*What I liked most about the visit was the recommendations that the parents gave us and their reaction to seeing the chair. I am proud of my work and it was well worth the effort. I think that people who see our work will be encouraged to do similar things as well as pollute less. - Bruno, 11 years*

*What I liked most about the visit was seeing my work displayed in the museum and being able to celebrate with Angelica, our parents and friends after we exhibited the chair. I believe that our work can help make a more sustainable world because we have set the standard for other people to continue working for a cleaner world and encouraging others to make things like our chair. - Anna, 11 years*

Loris Malaguzzi invites us to be a school that is physically attached to the ground, but also like a sailing boat. That means that parents will embark with us to see different landscapes, transformations, and phenomena. It is a moving school because children move, and change society. We must have this ability to be open minded.

During this visit the operating manager and museum manager informed the children that thanks to them the Museum launched its proposal for developing a call for "sustainable furniture" made from reusable materials, designed to encourage the community to protect the environment.

*We went to the Planetarium ALFA with our parents to see our chair. It felt very good because the exhibition looked cool and because thanks to our project, they will have a contest on sustainability and more people will know and learn about this.* - Adrian, 11 years

*I feel great and proud because this project is sustainable and will help the future generations, many people will see this chair and ones like it and all the chairs in the world could be sustainable.* - Ivan, 11 years

*I think our work can help people do similar things with the garbage and then it won't exist.* - Sofia, 11 years

*The chair is made of tires and can engage people and encourage them to do something similar and then we will have a more sustainable world.* - Ana Paola, 11 years

The initiative of the Museum is a clear demonstration of the ability children have to transform their environment and make changes in society which generates awareness—then they will achieve the goal of our institution to be co-creators of culture.



As stated by Hoyuelos, documentation establishes consistent and creative relationships between theoretical ideals and educational practice: between our statement and our actions, our desires and those of others, and understanding of others. Through documentation it can unveil a school that wants

to discuss their work beyond words, a school that thinks, reflects, learning along the way, a school that knows how to incorporate public discussion, is able to listen and to speak with democracy, building mutual trust and processes of public legitimacy.

### **Conclusions**

For those of us who teach our children in a social – constructivism manner, documentation is of great value in our daily lives. Therefore, it is important that we invite our students to be part of this process and by creating a culture of documentation among the children, this will have valuable implications in their learning processes. For this reason, as stated by Dahlberg, Moss and Pence (2005), pedagogical documentation is a challenge to uncover the dominant discourses. It is a political strategy, a critical and reflective tool to build a new education and democracy.

Mindful of our work, and with complete certainty of the value of children as they make changes in today's society, let us give them the chance to be the protagonists of their own learning processes, and let each of us leave a living witness who have the privilege of working with them.