The Chicken and Egg Project

Ivette Alkon
Eton School, Mexico City

Abstract

This article describes a project on chickens and eggs undertaken by 5-year-old children in a bilingual school in Mexico City. It describes the three phases of the project and includes photographs and other documentation of the children's work.

Background Information

The students involved in the project belonged to a kindergarten class in a private school in Mexico City. Even though the children's native language is Spanish, they used only English in the classroom. These youngsters were able to undertake an in-depth study of a topic in their second language.

Preliminary Planning

During the month of April, Nugget, the hen that was born at our school, started laying eggs. After laying one egg each day for six days, she suddenly stopped. The children started to ask why our chicken stopped laying eggs. This event triggered their interest, and I decided to pursue a project on the topic of chickens and eggs.

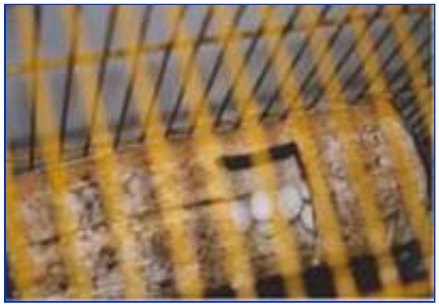
Phase 1

Beginning the Project

The children started to bring things from home related to the topic to share with their classmates. I started recording the things that they discussed, including their wonderings and interests.

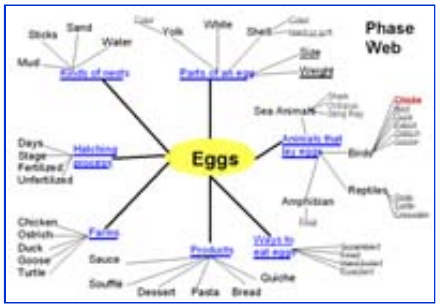
Figure 1. Álvaro brought a peacock's feather to share with the class.

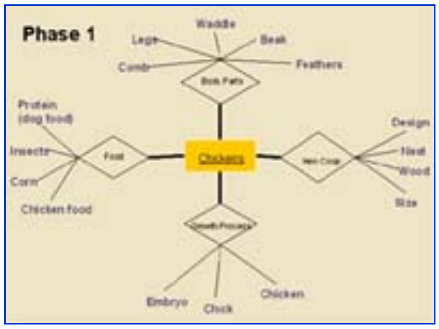
Figure 2. Ximena brought a nest to school that she had found in a tree in her garden.



Figures 3-5. Andrea brought her parrots to class, and we got to see the five little eggs that lay inside the nest.

I designed a topic web in order to explore different possibilities for developing the topic.





Figures 6-7: The teacher created a topic web about eggs and chickens based on the children's conversations.

The children started to tell personal stories about eggs and birds. Inés, one of my students, told us that her mother saw an egg in a tree. The egg fell from the nest and broke.

Figure 8. Inés told a story about her mother finding an egg in a tree.

The youngsters wondered whether an egg from the supermarket was the same as one laid by Nugget. They drew their predictions. The children shared the drawings with the rest of the class.

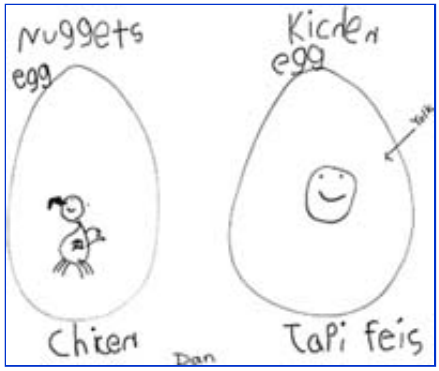


Figure 9. The children made drawings of their predictions about eggs.

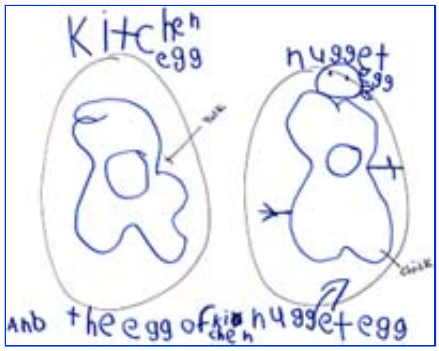


Figure 10. The children drew the inside of an egg from a supermarket and the inside of an egg from Nugget.

The children started to ask questions about chickens and eggs:

- What are eggs made of?
- Are all the shells hard?
- How is the shell made? What is it made of?
- Why did Nugget, our chicken, stop laying eggs?
- Will Nugget lay more eggs?
- How do we know if an egg is fertilized?
- Can we eat the eggs of all animals?

- In which part of the body does the chicken make the eggs?
- Where do eggs come out from?
- How does the hen know which eggs are hers?
- Can Nugget have chicks?
- What do chickens eat?
- How do chicks come out of the egg?
- How many rooms does a chicken need for its house?
- What do we need to build a chicken coop?

I wrote these questions on a poster board, which I displayed in the classroom.

Next, the students made observational drawings of Nugget, our chicken.

Figure 11. Liam made this observational drawing of Nugget.

The children hypothesized about why Nugget stopped laying eggs:

> Carlos: "Maybe we are scaring Nugget, and that is why she hasn't laid any more eggs."
> Fernando: "Because we need a rooster so that he can be the father."
> Victoria: "Because the hen thinks we are going to take her eggs."
> Inés: "Because the hen has an egg stuck inside, and it won't come out."

After several periods of discussion, the students suggested things we could do so Nugget would lay eggs again:

- Make posters saying, "Please don't look in the cage."
- Bring a rooster so Nugget could get married.
- Build a new house for Nugget.

A group of students decided to make posters to cover Nugget's house so nobody would bother her and she would lay eggs. Another group drew pictures to hang around our school so other children would not make noise around Nugget's cage.

Figure 12. Patricio wrote: "Please don't see inside."

Figure 13. Dan wrote: "Please be quiet."

We covered the cage with our drawings and waited for several days, but Nugget still did not lay any eggs. So we decided to try something else.

Figure 14. The whole cage was covered with the students' work.

We engaged in a discussion of what we should do next and decided it was time to bring a rooster to school. The children decided that Nugget needed to marry the rooster so she could lay eggs. As I listened to the children talking about plans for the hen's and rooster's marriage, I felt confused and did not know if organizing a wedding for chickens would be such a good idea. I thought about it for a few days, and I discussed it with my colleagues and my supervisor. Finally, we decided to follow the children's thoughts and respect their wishes. However, we decided that if we were to organize a wedding, the children should learn how such an event is planned and carried out.

The Chickens' Wedding: Phase 1

We held conversations about weddings and told personal stories. Several children in the class had things to share. We talked about things we needed to do, and we assigned jobs.

The Chickens' Wedding: Phase 2

A group of students worked on designing the wedding invitation.

Figure 15. We chose Andrea's design for the wedding invitation.

We looked at many samples and concluded that all invitations had the bride's and the groom's initials on them. The children learned about logos and designed their own.

Another group was in charge of writing the invitation's text. The children understood that they needed to include the time and place of the event, so they inquired about the school's address with the secretary.

Figure 16. A child asked the secretary about the school's address.

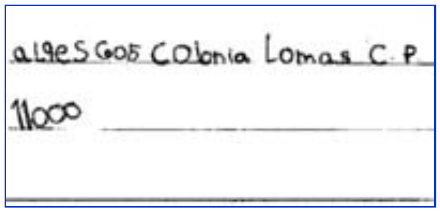


Figure 17. Sharian wrote the school's address.

The children later typed the invitation using the computer. I noticed that they had written the text using only capital letters. I took advantage of the opportunity to teach them the correct use of uppercase and lowercase letters. The children in that group returned to the computer lab and rewrote the text.

A third group of children was in charge of finding out the cost of the paper for the invitations. They interviewed the person in charge of purchasing our school supplies.

By looking at different invitations, we discovered that they included maps with directions of how to get to the place where the event would be held. Some students worked on maps to include in Nugget's and Rooster's invitation.

Figure 18. Valeria drew the map showing how to get from our classroom to Nugget's cage.

Other children made envelopes for our invitations. They assembled them by sewing the sides with yarn, and they then wrote on them the names of the persons who would receive the invitations.

Figure 19. Liam and Víctor made the envelopes.

The children wrote a guest list, and they decided to invite all of the staff and children. Teli and Lucette announced the big event during morning line up and invited everyone to attend.

During the class meetings, the children discussed things that still needed to be done. We baked a cake to share with our guests after the ceremony, and we painted a cage where Nugget and Rooster were to be married.

Figure 20. We baked a wedding cake.

We designed a form to record the confirmation of guests. A group of children went to different classrooms and interviewed staff members in order to find out whether they would attend.

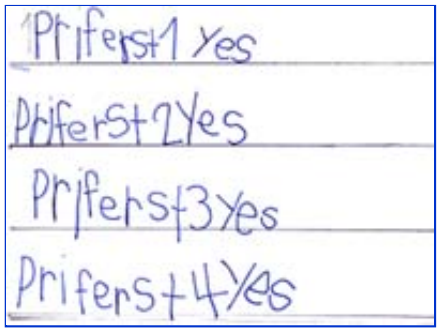


Figure 21. The students recorded the confirmations for the Pre-first level.

Eduardo, Teli, and Patricio worked on writing the speech someone would read during the ceremony. They wrote:

> Nugget is a nice hen.
>
> She is very friendly.
>
> Rooster is a nice chicken.
>
> Nugget has beautiful feathers.
>
> Nugget likes Rooster.
>
> Do you, Nugget, take Rooster for your husband?
>
> Do you, Rooster, take Nugget for your wife?
>
> Now you are married.
>
> Please be happy.

The Chickens' Wedding: Phase 3

The big day finally arrived. The children in my class wore their special clothes because they knew that elegant clothing is worn on special occasions and this wedding was certainly one of them.

Some of the 6-year-old students volunteered to play the violin as Pancho and Marcelo, the school's janitors, walked down the aisle carrying the bride and groom. The ceremony took its course as Inés and Eddy read the speech and four witnesses signed the wedding certificate that had been previously designed by the children.

Figure 22. Pancho and Marcelo came down the aisle with Rooster and Nugget.

Figure 23. Eduardo delivered the speech.

Figure 24a. The children designed a wedding certificate, which read,"We are here to celebrate the love between Nugget and Rooster."

Figure 24b. Two 6-year-old children played the violin at the wedding.

We all had a great time at the wedding. We did "The Chicken Dance," took pictures, ate cake, and did all the things people usually do at weddings.

As the days went by after the wedding, the children patiently waited for Nugget to lay an egg, but nothing happened. We held another group discussion and decided that it was time to try something else. Some children said that Nugget did not like her house and thought that it would be a good idea to build a new chicken coop. In order to do things "right," we knew that we needed to conduct some research. I planned a visit to a bird farm so that the children would be able to see various cages and chicken coops as well as to gather other valuable information.

Phase 2

Fieldwork

In preparation for our field visit to a bird farm in Malinalco, a small town near Mexico City,

children made drawings and wrote in their journals about what they thought they were going to see. I displayed their predictions on a poster board in the classroom so that they could revise them after the trip. We hypothesized about how big the cages in Malinalco would be. Lucette and Fernando measured the cage we have at school using yarn and predicted the size of the cages that they expected to see during the field trip.

Figure 25. Lucette predicted how big the cage in Malinalco would be.

When we arrived, Gonzalo, the owner of the bird farm, showed us around. We had a chance to see different species of birds and pet parrots, and we even saw a baby alligator.

Figure 26. Isabela got to pet a parrot.

Figure 27. Carlos got to pet an alligator...

Gonzalo, the expert, answered many of the questions that we had about chickens. We learned that if we get close to a hen and she starts making noise, it means that she has laid an egg and is trying to protect it.

Figure 28. Gonzalo answered our questions.

Some children made observational drawings of the chicken coop and the chickens inside it.

Figure 29. Valeria drew the chicken coop and made field notes.

The children knew that they wanted to build a chicken coop at school. For this reason, they took a close look at the ones that we saw at the field site. They used a measuring tape to record the coop's dimensions.

Figure 30. Victoria's mother helped the students measure the chicken coop.

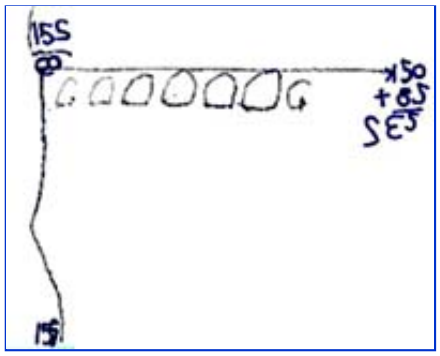


Figure 31. The children recorded the measurements of the chicken coop.

Next, we proceeded to see the incubators. The youngsters had an opportunity to observe the eggs in the incubators, and the expert showed us how we can see inside an egg by using a flashlight. It was very interesting because we saw an 8-day-old embryo. Some children found

this experience interesting and decided to take field notes.

Figure 32. The children examined an incubator tray.

Figure 33. Victoria took field notes on the incubators.
She wrote what they were made of.

The children also had a chance to see what chickens at the farm are fed. Some students made sketches of the beetles that the chickens eat.

Figure 34. Andrea sketched what chickens eat.

Figure 35. The chickens were fed these beetles.

After the visit, the children recalled what they had seen and compared their new knowledge to their earlier predictions. After recalling what they had seen during the field visit, children worked on journal entries that expressed what had interested them most during this experience.

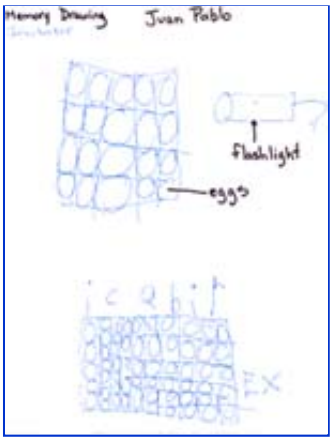


Figure 36. Juan Pablo made a memory drawing of the incubator and the flashlight that he saw during the field visit.

Representing Knowledge

The children's interests on diverse aspects of the topic became very clear. With these interests in mind, we formed different subgroups for further research and representation.

Group 1: The inside of an egg. A group of students wanted to learn about the parts of an egg. They drew what they saw inside and labeled its parts. They learned some names and taught them to their classmates.

Figure 37. Students drew the parts of an egg.

Figure 38. The children worked as a team.

Once they learned about the parts of an egg, they investigated how eggs are formed inside a hen. They looked at books and diagrams and then represented their understanding by drawing a big poster.

Group 2: Eggs in the supermarket. Children in this group were interested in learning about the eggs sold at the supermarket and the information people are able to gather from egg cartons. They made a Venn diagram to compare different brands of eggs.

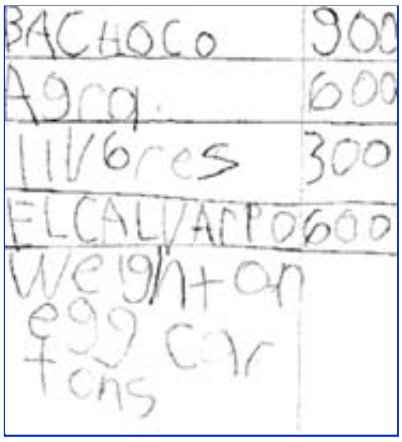


Figure 39. The students recorded the weight of the different egg cartons.

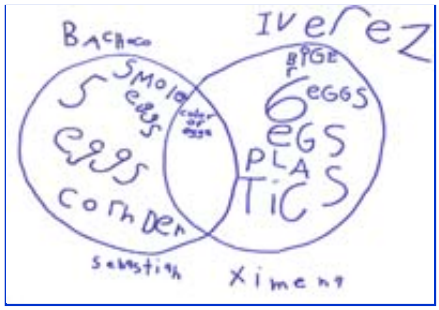


Figure 40. They compared the eggs and egg cartons.

The children weighed 1, 7, 12, and 20 eggs. They learned that egg cartons have an expiration date, and they discovered what that meant.

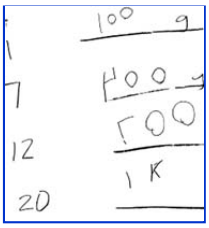


Figure 41. A student took notes of the weight of the eggs.

The children found out from the information printed on the egg cartons that different brands come to the city from different places. They looked at a map of Mexico and located the places of origin of different eggs. They figured out which egg company was the farthest from Mexico City and which one was the nearest.

Figure 42. Andrea and Ximena drew the map of Mexico.

Figure 43. The children drew a line representing the distance the eggs traveled to get to Mexico City.

Group 3: Chicken anatomy. Students in this group looked at the similarities and differences between a hen and a rooster. They made a Venn diagram to represent the information.

Figure 44. One of our mothers helped the children make the Venn diagram of the difference between a hen and a rooster.

Some children were interested in finding out the names of the parts of a chicken's body. They worked in pairs and labeled a diagram of the hen by looking for information in books. Each of the children learned some names and shared them with the rest of the class at the end of the day.

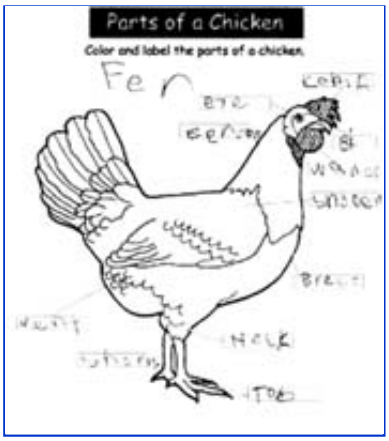


Figure 45. The children labeled a diagram of a hen.

Then, the students made a pop-up book about the parts of a hen. They drew a part of the body of the hen and then placed a paper on top with a little window showing only a piece of the drawing. They wrote, "What is this?" Then they would turn the page to see what it was.

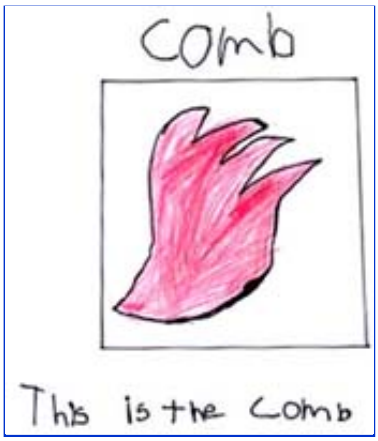


Figure 46-47. These are parts of one of the pages from the book.

This group of children was interested in making models of different breeds of hens that we had seen at the bird farm. They began to make the models using Styrofoam balls for the heads and the bodies. Then they covered the models with newspaper and glue, giving them the real shape of chickens. They had to cut sticks for the feet, paint the bodies, and paste feathers on the bodies. They looked at pictures of the chickens because they wanted to make their models look as real as possible.


Figures 48-49. The students worked with the help of a mother to build a model of a chicken.

Figure 50. They painted the model white.

It was amazing to see the resemblance between the students' work and the real chickens.

Figures 51-52. The children finished by placing feathers all over the model.

Figures 53-54. The children were very happy with how their models turned out.

Group 4: Incubators and hatching. Children in this group were interested in understanding how an incubator works. They started by learning to read a thermometer in order to keep track of the temperature, and they checked the humidity needed for the eggs to hatch.

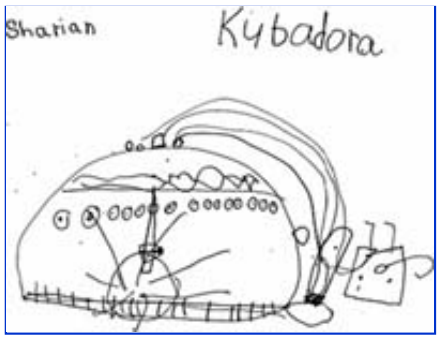


Figure 55. Sharian drew the incubator.

We wanted to determine whether embryos were really developing inside the eggs. We assembled a box with a light bulb, and we looked at each egg in the same way we did at the bird farm.

Figure 56. We made a box with a light that we used to see inside an egg.

Next, the children placed the eggs in the incubator and initiated a countdown to the expected hatching date. The eggs were in the incubator for 21 days, but unfortunately none hatched.

The students hypothesized why the eggs didn't hatch:

> Inés: "Because there was no water in the incubator."
>
> Fernando: "Because some children touched the incubator."
>
> Patricio: "Because the temperature was not correct."

I realized that even though our egg hatching was not successful, the children had learned much about the process of incubating an egg and how the chicks hatch.

After they realized the eggs would not hatch, the children wanted to crack the eggs open to see what was inside. They drew predictions of what they would see.

Figure 57. Lucette predicted what we would find inside the egg.

After we cracked an egg open, we saw that an embryo was formed and it had feathers. For some reason, it had suddenly stopped growing.

Víctor made an observational drawing of the egg and embryo.

Figure 58. Víctor made an observational drawing of the embryo.

Figure 59. We took this picture of the egg that we cracked open.

Undeterred by the hatching experiment, all of the students wanted to participate in building a chicken coop. Victoria wrote a journal entry of the things we would need to build the coop.

Figure 60. Victoria made a journal entry about the chicken coop.

They discussed and wrote a list of things using the computer.

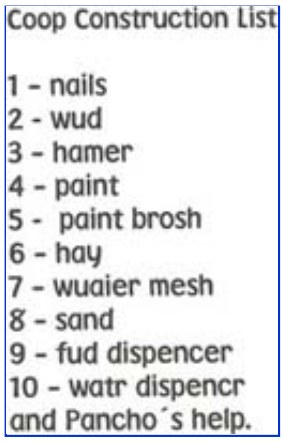


Figure 61. The children made a list of needed materials in the computer lab.

We had to decide how big the chicken coop would be. We used Unifix cubes and then measured the dimensions using a ruler.

Figure 62. Students used Unifix cubes to decide on the length of the chicken coop.

The children selected wood and started to work on building the coop. They observed the pictures closely because they wanted the coop to resemble the one in Malinalco as closely as possible. The students completed their work after eight sessions.

Figures 63-64. The children used hammers and saws to build the coop.

Figures 65-66. The children had to build the ladder and varnish the coop.

Figure 67. The students installed the wire mesh.

We were amazed by what the students built.

Figures 68-69. The children were very happy with the chicken coop they built.

After we finished the chicken coop, we decided to write a book about chickens. We made it by painting pictures of hens and wrote text underneath. We decided to put music to it, and we turned it into a song.

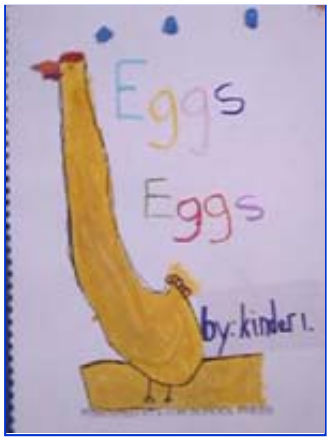


Figure 70. The children made a book about eggs and chickens.

Figure 71. This is one of the pages in the book.

New problems arose. The chickens began to lay eggs, but they were eating them. We had to figure out what was happening. We found out that it was because they were missing calcium in their diet. So we decided to try giving them different foods. Fernando brought some dog food for the chickens. They did like it and ate it all. We also bought some special food for them, and they stopped eating their eggs.

Figure 72. Fernando brought dog food for the chickens to try.

The children were so interested in chickens and eggs that they decided to make some drawings on eggshells.

Figures 73-76. The students were very creative drawing on the eggshells.

Some weeks later, an egg hatched, and we had a chick in our school.

Figure 77. We put the chick and its mother in the coop that we built for them.

Getting Ready for an Exhibit

Because the children had done so much work for this project, they wanted to share it with their

families. They began to think about the work that needed to be done and the items that needed to be included. After a few discussions, different groups were formed. They were going to be in charge of writing labels for the displays, designing the invitation, making a big sign with the title of the exhibit, taking care of snacks, and putting together the display cases.


Figures 78-79. The children wrote labels describing the different items displayed.

Figure 80. A group of students worked on the sign for our exhibit.

Figure 81. A couple of mothers helped the children make egg-shaped cookies to serve as snacks during the exhibit.

Figure 82. Another group of children designed the invitation that was sent to parents.

Phase 3

After eight weeks of intensive work, the students' parents came to school to see all the work that their children had done and all the things that they had learned. I shared photos and the children's work through a PowerPoint presentation, which documented the project from beginning to end. Parents were then invited to visit the exhibit with their children.

Figure 83. Children's work was displayed for the parents to see.

Figure 84. A group of children offered the cookies we had baked.

We invited the owner of the bird farm to our exhibit. He was very impressed and gave us a parrot as a gift.

Figure 85. The children were very happy to have a pet in our class.

Six weeks after we had finished our project, someone brought in an article that appeared in one of our country's major newspapers. Mexico's Egg Institute invited all Mexican children to enter a contest by making drawings of eggs. We thought it would be interesting to see what the children remembered. We invited them to draw, and we wondered what we would find in their drawings.

Figure 86. Explaining her drawing, Lucette said, "Hens sit on their eggs to keep them warm. Chicks will not be born if the eggs are not kept warm."

Figure 87. Victoria explained her drawing, "The hen makes her eggs inside her body. She needs to eat well so that they are strong."

Every child in the class sent a drawing. Dan was one of the winners of this national contest. He got a diploma and $300 (three hundred pesos). He bought a soccer ball with his prize money, and he was very happy. We felt very proud of him.

Figures 88-90. The people of the Egg Institute published an article about the contest, and Dan's picture was printed in the newspaper.

Conclusion

The Chicken and Egg Project was a wonderful learning experience for both the children and me. It was exciting to see how much we all learned in a fun and interesting way. After concluding the project, I realized that I could not go back to the old way of teaching. Teaching using the Project Approach is more rewarding. The children become motivated, and they take learning into their own hands. They use many different skills such as reading, writing, math, and science without realizing it. As a teacher, I never believed in learning with my students until I tried the Project Approach. In my class, we all become experts on the topic we focus on.

Acknowledgments

I wish to express my gratitude to Yvonne Kogan for inspiring me to write this article. She has been a wonderful teacher and has guided me throughout my journey into understanding and learning the Project Approach.

Author Information

Ivette Alkon is a kindergarten teacher at Eton School in Mexico City. She is a graduate of California State University, Long Beach, with a bachelor's degree in psychology. She is currently working on her master's degree in international education at Endicott College in Mexico City.

Ivette Alkon
Eton School
Mexico City, Mexico
Email: ivettealkon@hotmail.com