

## **Integration of Mathematics, Science, Geography and Art for Teaching and Learning Spanish**

Esther Sehnalek

In recent years the government of the United States has expressed a special interest in providing elementary students the possibility of beginning to learn a language other than English as, especially in the 21st century, nations and peoples are increasingly interdependent. Conscious of these trends, some elementary public and private schools provide an after-school program or regular classes within the K-5 curriculum, giving the students access to the benefits of learning a Language Other Than English, and consequently offering them a wide vision of the 21<sup>st</sup>-century world. This paper describes an innovative approach for first grade foreign language teachers that integrates simple mathematics, science, geography, and art in the target language. As a teacher, I am conscious of the Standards for Learning Spanish published by the American Association of Teachers of Spanish and Portuguese (AATSP), and I adjust these standards according to the age and abilities of my students.

The following process was developed for a group of 13 students in the first grade. All of the students come from non-Spanish speaking families. This group had received basic Spanish the previous year when they were my students in kindergarten. Each class lasted only a half-hour and was offered twice a week. The program for the kindergarten students was developed in addition to the current curriculum. To set a general objective for the students, I kept in mind the general Standards for Learning Spanish. First and foremost, I made an effort to make the students feel comfortable listening to a foreign language and hearing themselves speak. I used common songs, singing commands while pointing to the body parts to familiarize the students with hearing and identifying the parts of the body in Spanish. As a general rule, I spoke only in Spanish from the first day of class, which was not an easy task. Comments from the students like “Why is the teacher talking in another language when we are in the United States?” made this a challenge.

Without taking into account the initial rejection, I continued with my program, asking names, saying good morning, counting with my fingers and showing cards with colors all in the target language during the short lesson. Within a few weeks, I found that they loved to learn numbers, as it is common in most elementary students. I found a great opportunity to teach them to say, to write, to read, and to recognize numbers. After practicing oral recognition of the numbers from one to ten, I began to give them writing activities with the numbers in both numerals and words, as well as a counting activity.

In one class the students wrote the numeral and the word. During the next class they colored a drawing displaying a corresponding number of shapes and figures that they had written and learned in the previous class. This process continued until they learned the numbers from one to ten. I used 15 minutes of the 30-minute class period for these activities.

At this point I knew that they were able to read and identify the written numbers perfectly. I printed the lyrics to the very well known song “Los Diez Amigos” in 20-point letters on a single piece of paper. Each child received a copy with a simple comment: “Today you will read.” They looked at me in astonishment and remarked that they did not know how to read. I knew that they could not read like you or I, but I was certain that

they could recognize the written numbers. I encouraged them to look at the lyrics and read. After a few minutes I heard them humming the reading in very low voices. I asked, "Who can tell me what the paper says?" and they all raised their little hands and responded "los números." To further encourage them, we sang the entire song from one to ten and from ten to one several times.

Using the same process, I taught the numbers from 10 to 20, but this time it was not necessary to ask the students to color the pictures because at this point they were more self-regulated in working with the numbers. When they finished writing the numbers from 10 to 20, I wrote for them "Los Veinte Amigos." This time they were not surprised, and they were very confident reading and singing the song in the target language.

The first task was accomplished; the students were used to hearing their voices in the target language and had also gotten used to my voice speaking in Spanish. The reason I discussed what I did with this class the year before is because I now had the same group of students in the first grade receiving instructions in Spanish. All students felt very comfortable in class and demonstrated active participation by asking for explanations if they did not understand or wished to challenge themselves in Spanish. At the present time the students are able to understand sentences from regular conversation in the classroom.

The second purpose of this article was to provide information on the integration of geometry, science, geography, and art in my Spanish class. Geometric shapes were being taught in mathematics class, so I taught this topic in Spanish class at the same time. The students learned to write, to read, and to identify, and to say aloud the shapes in Spanish using cards and items in the classroom. I finished my short unit on the shapes and decided that it was the best time to introduce the body parts again (they had learned them in kindergarten). This time they not only repeated and showed the body parts but also learned to read and write the corresponding vocabulary. I followed the same processes that I had used for the geometric shapes.

At this point I was really excited about the opportunity to make a connection with another discipline. I had a wonderful opportunity to present to my students a great painter of our time and to offer the students insights into his country. I decided to introduce Pablo Picasso to them. I told them who he was and that he was from Málaga, Spain. They wanted to see the map, and we found Spain and Málaga. They were eager to know more about him. I selected two paintings by him: a big poster of the painting "Los Tres Músicos" (The Three Musicians) and "Maya con un bote" (Maya with a boat). I first showed them "Los Tres Músicos" and asked the following questions: "Can you identify the body parts in the painting?" The students identified all the body parts they recognized in the paintings. I then asked them, "Do you find something else in the painting that you had already learned?" Some of them mentioned the colors. I continued by asking whether they could identify anything else. They were eager to find something, and eventually some of them mentioned the geometric shapes and approached the painting to show the geometric shapes that they recognized. I had reached my goal; they could incorporate their knowledge of several subjects together in one piece by a great Spanish artist. With regard to "Maya con el bote," the recognition of geometric shapes, body parts, and other items in the picture was an easy process because they were able to recognize the shapes and body parts beforehand in "Los Tres Músicos" and continued to integrate the various subjects to identify the shapes, colors, and body parts. Finally, I read for them *Picasso*, a

children's book by Mike Venezia (1988), to expand their knowledge about the artist and his art.

As the final test to ensure that the learning process was satisfactorily concluded and that the integration of the various subjects achieved, each student produced an art piece. Several pre-cut geometric shapes such as triangles, circles, squares, rectangles, and ovals in various colors and sizes were provided. Each student could select up to three pieces of the same geometric shape and glue them together in the form of a puppet. The instructions were in Spanish, which allowed the students to demonstrate how they were able to comprehend simple instructions in the target language. To be certain they understood the instructions, I asked: "Who can say in English the instructions I gave to you?" More than one student repeated them in English.

During the whole process, students had the opportunity to communicate in the target language face-to-face in short sentences; to recognize, say, write, and read the basic vocabulary for geometric shapes, body parts, and colors; and know about a great Spanish artist. I feel free to teach them the units that I could integrate with others and offer them a glimpse into other disciplines while they are learning a foreign language without the pressure that students feel to pass a test. This is the beauty and the advantage of teaching a foreign language to elementary students; however, I believe that the same methodology could easily be adapted to upper-level students who are beginning to learn a foreign language.

### **Los Diez Amigos**

Uno, dos, tres amigos,  
Cuatro, cinco, seis amigos,  
Siete, ocho, nueve amigos,  
Diez amigos son...

Diez, nueve, ocho amigos,  
Siete, seis, cinco amigos,  
Cuatro, tres, dos amigos,  
Un amigo es...

\*\*\*\*  
,

### **Los Veinte Amigos**

Uno, dos, tres, amigos,  
Cuatro, cinco, seis amigos,  
Siete, ocho, nueve amigos,  
Diez amigos son...

Once, doce, trece amigos.  
Catorce, quince, dieciséis amigos,  
Diecisiete, dieciocho, diecinueve amigos  
Veinte amigos son.

Ahora sabemos del uno al veinte  
Ahora sabemos del uno al veinte  
Ahora sabemos del uno al veinte  
Tra la, la, la .....

### **References**

- Standards for Foreign Language Learning in the 21<sup>st</sup> Century. (1999) *Standards for Learning Spanish*. New York: A Project of the American Association of Teachers of Spanish and Portuguese.
- Venezia, Mike. (1988) *Picasso*. Chicago: Children's Press.
- Waltzer-Hackett, Winnie. (2001) *Teach Them Spanish!, Kindergarten*. Grand Rapids, Michigan, McGraw-Hill. Children's Publishing.