

One is the Sun Indigenous Pedagogy as an Adjunct in the Classroom

by Carlos Aceves

No culture can survive if it attempts to be exclusive.

– Mahatma Gandhi

When a social group feels it needs to impose on the resources of another group, its members do not simply tell themselves it is “time to act like thieves.” Rather they seek ways of justifying their actions. At that point, they might begin differentiating themselves as “civilized” while others are labeled “uncivilized.” For example, the official script is that the United States is in Iraq not to possess the country’s oil wealth but to “bring democracy” to an “undemocratic or backward” society. All cultures that become imperialistic begin creating an ideology that presents their culture as normal and civilized thus justifying their imperialism. Thus, they give themselves an “exclusive” right over those on whom they impose their power.

When I decided to draw upon my Mesoamerican heritage as a source to recreate a process of undoing whiteness in the classroom, I faced a dilemma. Was I recreating the colonial process described above by focusing exclusively on my own ancestral culture? I resolved this contradiction through focusing on process rather than content. I realized that the initial attempt of all groups is to create a means of survival for their culture and ensure the survival of coming generations by passing on this knowledge. The need for the “exclusivity” of that culture arises only when the original structure created by the group is transformed in an attempt to take and control the natural resources of other groups.

When I started attending Canutillo Elementary School in 1960, I encountered overt racism and a sociopolitical message that wreaked havoc with my self-esteem: to be Mexican was bad. Only through the Chicano Movement almost ten years later did I realize I was being conditioned to occupy a lesser position within the political and economic system of the United States, a society that had long ago become imperialist and colonialist.

Throughout my schooling the invasion by the United States of Mexican territory had been justified by portraying Mexico as an undemocratic country. Texas had been severed from Mexico because its new residents wanted “freedom.” Arguments in favor of the taking of the rest of Mexico simply followed the same reasoning. As my seventh grade history teacher told us, “The Mexican-American war was just as important to Mexicans as it was to Americans. Mexicans would finally have a free country to live in.”

However, did a postcolonial argument entail the reverse of the colonialist proposal that being Mexican was bad? In other words, did it mean that being Mexican or Mexican American is automatically good? In the Chicano Movement, we had to tackle this question when we found that many cultural beliefs steeped in Mexican culture were reactionary. My parents and their contemporaries believed that women were inferior to men. Protestants were considered the enemies of Catholics and Jews murdered Christ. They certainly did not believe in sex before marriage, much less in a woman’s right to an abortion. At face value, reaching into my Mesoamerican roots meant embracing seemingly equally bad contradictions: human sacrifice, institutional slavery, political and social hierarchy, religious dogma, and superstition.

However, my anti-imperialist consciousness developed through the Chicano Movement helped me not to abandon the idea of using cultural awareness as a pedagogical tool in a similar way that we had used Mexican American culture as a weapon against white supremacy. Within the roots of any culture, there are the human aspirations for freedom, dignity, and artistic expression. As cultures become imperialist or subjected to imperialism, these aspirations become distorted and suppressed but find their way across

history in the form of social struggle that often shakes the foundations of the contemporary society in which they now operate.

When Jack Forbes, at that time the director of Native American Studies at the University of California at Davis, visited the University of Texas (UT) at El Paso in 1974 in which I was a student activist, I brought my concerns about the problems associated with Chicanos identifying too closely with our Aztec roots. He counseled me to have a critical eye toward the sources from which we obtained such information about our history, reminding us that the history of indigenous Mexico was written by the same people who colonized Mexico and who were thus seeking to justify the colonization of the Americas. However, other than books, where should I look? At that time, I was introduced to a source of knowledge that I was not aware of but nonetheless already had academic value: oral tradition.

That was 1974. In 1980, with the Chicano Movement waning, I finally stirred my interests in earnest toward my Mesoamerican roots. I was fortunate to find sources of the Mesoamerican oral tradition. By 1991, I was ready to take some of what today might be called educulturalist designs into a classroom. I had a vision that fused ancient cultural constructs of civilization with critical pedagogy. My research had taken me not only to sources of oral tradition in Mexico concerning indigenous culture and history, but also to persons I would never have thought to be part of my work. I became intrigued with Rudolf Steiner, a German mystic who seemed to have designed similar pedagogy around the turn of the twentieth century. I also read *Symbol Formation: An Organismic-Developmental Approach to Language and the Expression of Thought* by Heinz Werner (1963). This work compares the similarities between the modes of expression of indigenous peoples, children, and schizophrenics. Werner seemed intrigued with how these groups' view of reality was essentially mythological in that they engage the world through modes that are full of fantasy. However, it is not a fantasy that creates and engages a fictitious reality. Rather it is something that in contemporary pedagogy called "holism" that "any local organ of activity is dependent upon context, field, or whole of which it is a constitutive part: its properties and functional significance are, in large measure, determined by this larger whole or context" (p. 3).

One maestro after another had stated this, although in not such academic terms. They were concerned that unless human beings learned to relate the part to whole and practice this integrity in whatever lifestyle they create, humanity was embarked on a self-destructive path as a species. The fundamental principle in the pedagogy of my Mesoamerican ancestors was to teach the children, and thus coming generations, how to express this integrity. They created a symbology that educates through participatory activity how the Universe, especially the Earth, is mirrored in the human mind and body.

Carrasco (1990) labels this process as world making (the group creates space for their community), world centering (placing members around a common center), and world renewing (establish a process for the use of community time) through which "the ceremonial centers of Teotihuacan, Chichen Itza, Tollan, and Quetzalcoatl Tenochtitlan were organized as replicas of this cosmic geometry, so that elites, warriors, captives, traders, farmers, poets, and commoners could experience this cosmo-vision and participate in its nurturance" (p. 52).

In 1990, I attended a small meeting of former Chicano activists in Phoenix, Arizona, where the term Xinachtli Project was first introduced. Xinachtli is a Nahuatl (Aztec) term that refers to a germinating seed. The idea was to introduce Mesoamerican-based pedagogy into the public schools. There I argued for the importance of a participatory approach that emphasized process not just content. I returned to El Paso with a pilot project that involved three classroom settings: a kindergarten, third grade, and freshman high school. In each were Chicano activists willing to explore this educational "experiment" based on Mesoamerican mythology. I went once a week to present an hour lesson to the kindergarten and third-grade classrooms. Heriberto Godina, the high school teacher, did his treatment independently and used the results for his Master's thesis at UT, El Paso (Godina, 1992).

What we presented were not new approaches but constructs time tested over hundreds if not thousands of years but contextualized to a contemporary classroom. For us these practices had given rise to earth nurturing societies. They seemed the natural allies of those seeking to reorient education toward a balanced integration of the self, the social, the environmental, and the spiritual. What better way to countering and undoing an ideology that through its Eurocentricity promotes disintegration and alienation of self for the purpose of justifying colonialism—the domination of one group over another—rather than a process that engages students in creating critical consciousness.

These early treatments of Mesoamerican pedagogy became an initial outline that I used when I changed careers in 1992 and entered the classroom as a bilingual kindergarten teacher in the Ysleta Independent School District in El Paso County in Texas. Three years later, I would join the Canutillo Elementary as a faculty where the Xinachtli Project would be further developed.

The Xinachtli Project

Although not all of the approaches can be explored here, I focus on three basic constructs currently at work in a variety of classrooms at Canutillo Elementary: *Tlahtocan*, *One Is the Sun*, and *In Tloke Naouke*. I still use the practice of visiting a classroom once a week and introduce a 45-minute interactive exercise that involves the interpretation, creation, and use of symbols. A large part of this exercise is in the form of ritually based play.

Young children play. It is their natural, primary activity. It is in their play that the importance of rituals and symbols surfaces. Waldorf Education founder, Rudolf Steiner (1924), describes the child's first seven years of playing as a sustained effort to adjust her spirit to an earthly realm, the grounding of the child's body-spirit to her environment.

Russian developmental psychologist Vygotsky (1976) regards play as a basic activity for socialization to explore cultural meanings, express unfulfilled wishes, and transform motives into acceptable modes of behavior. Karby (1989) concludes that symbolic thinking and language development are key to this process. Tahallary (1991) found that fantasy play has a highly significant effect on the language development of young children.

The use of symbols is integral to a child's play, expression of feelings, and ways of joining with other children to compare and create imaginary worlds that allow him or her to explore his or her experienced reality from a distance (Dyson, 1990). When Werner (1963) found commonality with children's development of language to the symbolic interaction of indigenous peoples, he was discovering how both groups use symbols as a means of not only interpreting but also interacting with the world.

Sobel's (1991) five-year observational studies of his daughter Tara revealed a plethora of metaphorical perceptions that, like Native American mythology, "bridges the gap between images and concepts in language, between unlike organisms and creates a kind of inter-species empathy. Cultivation of this empathy in early childhood is one of the foundations ... for ecological living" (p. 7).

Tlahtocan

Creating a structure to tap into this metaphorical play became relatively simple once you understood the Mesoamerican process of council called *Tlahtocan*. The term means "place of the spoken word" and any circle of people where Carrasco's (1990) elements of ceremonial gathering are placed serve as a *Tlahtocan*. Basing the activities of the project on this structure seemed a natural choice, the first and primary exercise of any Xinachtli effort. This community takes the form of all participants, students and teachers, sitting on the floor in a circle. This creates a more egalitarian atmosphere with a visual

semblance of equality, and participants are geometrically linked in whatever activity follows. This becomes our community and is itself a symbol, the Circle. It is a form of a *world making*.

The next is the step of *world centering*, the creation of a symbolic center to our circular community. This can be done through the simple use of a candle or a mirror. As the children become more literate in Mesoamerican symbols, I use a replica of the Aztec Calendar. Once this center is established, it is not only interchangeable but can also be removed to accommodate an activity.

World renewing is initiated through totemic membership. Each participant is given a stick, sometimes a pebble, which becomes his or her symbolic membership card in our community. This totem is used as a way of entering into an activity, but the symbolic entry into the community through our totems generates a veneration of the mythic community, a sense of rightful participation, and general respect. As the circular seating is complete, the members place their stick in front of them facing the center.

Another symbol that is chosen for the activities of world renewing: a common totem that gives the holder "la palabra" or the voice. Referred to as a "talking feather or stick" in Native American circles, this totem serves as a way of structuring dialogue within the Circle. Whoever holds the totem holds the right to speak and the others respect this until the member gives way either by acknowledging another's right to speak or handing over the totem. This activity also creates a sense of empowerment and is good for nurturing self-esteem and further group respect.

Creation of community in this form accomplishes two goals of the Xinachtli Project. It establishes an indigenous form of social interaction, thus giving the children a sense of an ancient construct that is now contextualized with a contemporary setting. The students do not see it as something foreign or outdated to the world of the classroom. The other goal is to provide a forum for critical dialogue. The "talking circle" becomes a safe and conducive place for the children to express themselves and listen to what others have to say. It allows the teacher to model and guide the process of dialogue. As students and teacher engage in subsequent activities, each activity and the interactions that come with it is in turn shaped into an indigenous process by virtue of happening within the structure of the metaphorical community.

Two activities are important to the *Tlahtocan*. These activities are not limited to a particular grade level; I have used them with kindergartners as well as middle school students. One is the discussion around the question, "Who I am?" This allows a child to explore identity from a personal basis and later relate it to a social context. Without exception, all children first give their answer as their names. However, I shift the focus by asking, "If your name was changed today, would you still be you?" They are inevitably intrigued by this question but quite naturally and energetically answer in the affirmative. Their subsequent responses evoke quite critical responses, some of which are definitely metaphorical.

Here is a list of responses from 2005 to 2006 first-grade class to "Who am I?" They range from the obvious to the more complex: I am me. I am a boy. I am a girl. I am someone who can walk. I am someone who can move. I am someone whose hair grows. I am someone who is valuable. I am someone who needs air, who needs water, who needs food, who needs a home. I am someone who has feelings. I am someone who speaks in the languages I am taught. I am someone who comes from my father and mother. I am someone who can touch, smell, hear, taste. I am someone who can think. I am someone who comes from the Earth.

The purpose of this exercise is not only to give students a sense of identity outside their given name, but also for them to create subject matter for discussion and further reflection. Take for example the response, "I am someone who speaks in the languages I am taught." First, the student who spoke these words did not name a language, nor did he answer in the singular. When asked what languages he was

referring to the answer was “español y inglés.” Why did he not name them? “Because I can learn other languages. You’re also teaching us Nahuatl, but I don’t know it yet.” Then we began identifying the sources of their learning. For most students Spanish had come from their parents, and they viewed school as the place where they would learn English. A few came from homes where both Spanish and English were spoken and they saw school as a place where they would learn to read and write in both. The children were empowered in their understanding that learning other languages was possible beyond their homes.

An equally important side of this dialogue is discussing the identities that students identify with their names. Here the talk turns to social forces outside themselves—parents, religions, languages, institutions—that require members of society to adopt identities that are not strictly personal but social. The need for social studies then becomes contextualized for the students not as an abstract subject matter, but as a way of understanding those social forces that act on their lives daily.

Within this discussion, I am able to share with my students how I came to learn English under conditions different than theirs. They are astonished to find out that I was physically punished for speaking Spanish while they are being taught primarily in this language. “How did things change?” is their inevitable question. What an opportunity that presents to include the role of social struggle in the formation of social identity and changing the institutions that affect our lives. I make this discussion a part of the Social Studies curriculum that requires us to cover Martin Luther King and the civil rights movement. The students’ personal identification with language empowerment makes the discussions richer. They clearly see not only the wrong in punishing someone for speaking a language, but also see the practice as “stupid” or a mistake because “it is better to know more than one language.”

The appeal of the English-only movement to immigrant parents is that they see it as empowerment, a way for their children to succeed in a society in which the English language is the *lingua franca*. In a classroom where the children are learning two languages and being introduced to a third, they begin to understand the strength that lies in being multilingual. This kind of dialogue engages the children in nothing less than critical pedagogy where they begin to see education as a process of creating their reality rather than simply acquiring the skills to survive an already structured one.

Another activity is the Feelings Box, a simple shoe box decorated with bright colors and a slit through which pieces of paper can be deposited. As part of their Social Studies, the children learn to name feelings beyond the usual sad, angry, scared, and happy. In my classroom, we identify at least 30 feelings: bored, apprehensive, nervous, deceived, betrayed, enthusiastic, and so on. The children regularly pursue the following writing format: Write a feeling you experience, describe the situation that created it, and tell how you will deal with it. These “identity and emotions activities” develop in children an active, practical, and empowering knowledge of self as well as integrate language arts, reading, and social studies curricula. I have found that exercises in introspection are rare in public education. In fact, in Texas schools, counselors are no longer allowed to provide “therapy” for students; they can only refer them to other public or private psychotherapeutic avenues. However, as children in my classroom engage in identifying and expressing their feelings, they inevitably connect them with situations in their homes or neighborhoods. The *Tlahtocan* at times leads to engagements in psychotherapy that are well justified as extensions of the Social Studies curriculum.

One Is the Sun

A playful, metaphorical exercise that we engage in begins with the saying “One Is the Sun.” It is a slight variation of Mesoamerican numerology that I first came across in the works of Domingo Martinez Paredes (1971), Mexico’s foremost scholar of Mayan origin. Later it was elaborated through discussion with one of his students, Hunbatz Men (1984).

The children are taught a series of 14 phrases involving 0 through the number 13. These phrases are said in conjunction with arm and hand movements that correlate to each phrase. Often we improvise, and the children can create their own motions as playful expression. The exercise begins with “One is the Sun” and continues,

Two is the Earth ... Three are the animals ... Four are the people ... Five is the world ... Six is the sky ... Seven is the moon ... Eight are the birds ... Nine are the seasons ... Ten is death ... Eleven are the waters ... Twelve is community ... Thirteen are the stars ... Zero is infinity.

This ongoing exercise of combining numbers with natural phenomenon is part of Joaquin Galarza’s (1991) assertion that Mesoamerican languages practiced using two or more unrelated images to create a montage as a form of communication. It is also a mnemonic device to remember information about the natural world and thus creates a montage effect in thinking, an automatic creation of metaphorical language that begins to teach children how information can be fun as well as factual. After the children practice repeating these phrases in combination with body motions, we dialogue about why the number and the phenomenon would be combined. No answer is discounted but rather is incorporated into the Mesoamerican meaning of this numerology. In the 15 years of using this exercise, I have never found children lacking in opinions about each number/phenomenon combination. Once a healthy dialogue occurs, the teacher introduces the historical information about each numerical sentence.

Regular classroom work is integrated into this numerology by creating activities that explore that phenomenon. They can be as simple as observing how the Sun rises one side (in the east) but sets on the other (in the west). It can be the construction of a sundial, measuring how sunlight changes temperature. It can be a more elaborate activity that I do yearly when we make adobes or mud bricks. This activity is related to the numbers one (the Sun dries them), two (they are made of Earth), and five (bricks are one way we construct the world).

I also incorporate stories that reinforce each phrase. *Arrow to the Sun*, a pueblo myth (1974)[AQ: Cited as 1994 in the list. Please check], is an excellent adjunct story for One is the Sun. A young maiden becomes pregnant with a ray from the Sun and the child suffers alienation as a result, but through an epic journey becomes a leader of his people. *When Clay Sings* (1972) deals with Earth (two) using pottery and the story is about death, clay becomes a way of honoring the ancestors (ten).

Mesoamerican oral tradition abounds with mythic stories that can be contextualized to a contemporary setting. Take for example the story of Quetzalcoatl discovering corn. When the people of Central Mexico were hungry, they summoned Quetzalcoatl for help. He searched for a food that would feed the people. He discovered an ant that was taking some corn to the anthill. The ant told him what corn was. Realizing it was the food he was looking for, he turned himself into an ant, went into the ant hill, and brought back seven grains from the multicolored corn. He also brought back the knowledge of the *tekiotl* [AQ: Please provide the translation] the social structure of how the ants worked their community and harvested the corn. *Tekiotl* is a combination of two words, *teki* (instrument) and *yotl* (way). Its montage meaning is the way of the instrument. It simply means work.

I tie this story to a unit on corn. The children learn that ants are the only other species besides humans to harvest corn. They learn that Quetzalcoatl is a symbol for the human quality of intelligence and that he represents how people observed and learned from the ants. They learn that corn originated in Mexico and is now a food staple all over the world. I also have songs and stories in Nahuatl that relate to corn. This story ties in well with “Two is the Earth, Three are the Animals, and Four are the People” in the Mesoamerican numerology.

In the “talking circle,” stories are usually presented orally rather than read from a textbook. Stories read from books are done in a different classroom setting. This reinforces the *Tlahtocan*’s definition as a “place of the spoken word.” In their language arts, the children create their own stories using one or more of the sentences as prompts. These stories can be introduced into the *Tlahtocan* for further discussion. Here is an example of a story made-up and told by a student in kindergarten:

La niña, Flor, woke up in her house. She ran away from home. She went to play in the sea. She was attacked by a crocodile and a shark but a big ball came and rescued her. She drowned and died. But she wasn’t really dead. She was rescued by her brother and parents. She was rescued with a rope. When she got home, she went to bed to sleep.

“What happened when she woke up?” I asked. The author, who was a girl, thought for a moment. Then another child added, “It was only a dream!” The girl smiled and nodded in agreement.

The story by itself is simple but quite creative for kindergarten. Metaphorically she used the image of a “big ball” to express forces in life that are often powerful but unseen. The animals are symbolic of those forces as well, circumstances or people with greater power that injure us. The rescue by her brothers and parents tell of her reliance on family. This story can also be seen as an attempt to bridge the gap between the realities of dreams and the waking state. Although young children may not be able on their own to fully discuss the ramifications of such a story, they can be guided by the teacher toward in-depth discussions. The use of metaphor and symbols as a way of interpreting, coping with, and renewing (impacting) our reality is one of the goals of the Xinachtli Project. It is almost like teaching children another language, but it is definitely giving them another model for critically viewing themselves in the world they live in.

Mesoamerican numerology is using numbers as mnemonic devices that also interpret phenomenon but always leave the door open for interpretation and knowledge gathering. When this numerology was presented to a fifth-grade classroom, they began changing the combinations. For example, they assigned two to the sun explaining that the sun gives us two things: light and heat. When interpreting geometric shapes, some say “four is a square” because it has four sides or “three is a triangle” for the same obvious reasons. However, one form that is often argued about my presentations, especially to grades third and higher, is whether a circle is zero or one. They argue the circle is one because it has only one edge, but they also argue that it is zero because a circle has no beginning or end. The ongoing lessons of One is the Sun are not mystical dogma, but continuing interpretative conversations leading to the increased use of metaphor and critical thinking to interpret information across the curriculum.

In Tloke Nauoke

One way that imperialism weakens a people being colonized is by taking away their ability to continue to use the cultural symbols they have relied on for their social interaction and defining their relationship to their environment. Whiteness in the classroom is pedagogy that continues to debilitate and negate cultural connections to history from which oppressed peoples can draw liberating strength. In Mexico, the Spaniards outlawed the sacred symbols of the people because they perceived them as symbols of the devil. When these were relegated to academic texts, written by the same oppressors who had outlawed them in the first place, they were ill-defined and distorted. However, the texts provided a basis on which Mexicans could renew their use once the rule of the Spanish Crown had been vanquished.

Through the Xinachtli Project, I have used the knowledge of the tradition (see note 2) to reintroduce these symbols back in the classroom. However, I do not use them as cultural icons that merely inform students that they are part of their indigenous heritage. Rather, I use them as vehicles for teaching

elements of the contemporary core curriculum. Thus, these symbols are literally restored to life and made practical once more to the descendants of those who also once used them as practical tools of pedagogy. They are “liberated” from their colonial academic prisons, perhaps eventually to serve as weapons for the liberation of the people they once served.

One of these symbols is the *In Tloke Nauoke*. It encompasses a cosmological vision that states that the whole reflects the part and vice versa. Such a concept is familiar to those acquainted with dialectical materialism and holism. María del Carmen Nieva (1969)[AQ: This reference is not cited in the list. Please check.] explains that *In Tloke Nauoke* is that which holds and brings together. All parts of the Universe, including human beings, as well as the Universe itself, are *In Tloke Nauoke*. This symbol expresses how the dual creative energy comes together to create everything in the cosmos (pp. 87–88).

On a geometric level, this symbol is a circle that hold within it a square. The edge of the circle is tied to the square at the square’s vertices. However, it can also be expressed as a square holding within it a circle. The edge of the circle touches each side of the square. When the circle is within the square, it is simple to demonstrate that the relationship of the square to the circle is 3.14 of its sides. Thus, the Mesoamericans had also discovered the constant Pi at least a thousand years before Archimedes (Esparza, 1975).

Hunbatz Men (1984) later explained how *In Tloke Nauoke* was the basis for Mesoamerican calendar designs, and how its geometry was necessary to incorporate key celestial cycles. I demonstrate how the geometric progression incorporates 7 circles and 6 squares (a total of 13 shapes). This allows the Aztec Calendar to create 20 divisions of each of the 18 segments, then 4 divisions of one 20 unit segment, and 4 divisions of one segment. The result is 365.25 days for the year, which is the way Mesoamerican calendars have measured Earth’s orbit for millennia. When an eighth circle is added to the progression, the form automatically becomes a proportional representation of the Earth, where the angle relations between the equator and the tropics can be traced and measured to the exact degrees they exist on the planet.

Elementary students are too young to appreciate the fact that one of the effects of whiteness in the classroom is to discount such symbols as primitive or outdated. However, whenever I do presentations of the *In Tloke Nauoke*, the adults present are usually astonished at the sophistication of such indigenous mathematics and science. They may not verbalize it but when they say, “I didn’t know this,” what they are really expressing is that until that moment they only saw the science and mathematics of the dominant society as sophisticated, and those who dominate that society as originators of such discoveries.

The international nature of modern mathematics is a relatively recent phenomenon and represents a continuation of mathematical developments which occurred in Europe during the centuries from 1600 to 1900 ... Historians of mathematics have concentrated on the great main stream leading to modern mathematics and have paid only scant attention, if any at all, to mathematics in cultures not directly contributing to it. (Closs, 1986, preface)

In the classroom, the symbol *In Tloke Nauoke* is introduced in relation to “zero is infinity” and it is part of our *Tlahtocan* work. We begin with the simple question “What makes a circle possible?” After the students attempt to draw a circle and conclude that it is not “real” because is not “the same all the way around,” next, through some enthusiastic interactive dialogue the children eventually arrive at the basic solution to creating a circle: find a center. I illustrate with string and pencil how a center makes a circle possible. Nevertheless, I quickly ask, “Before the center what did I have?” The inevitable answer is “nothing,” and I follow up with, “Does nothing ever end?” This sets up a good context for talking about zero as infinity, what never ends. But I also ask if the circle has an endpoint? I do this as I walk one of them around the circle drawn in the middle of our *Tlahtocan*. Thus, they visually see how the number zero and the circle are related to infinity.

This exercise is followed up by demonstrating, as Leonardo da Vinci did centuries ago, that the human body is an *In Tloke Nauoke* [AQ: Please check spelling. Elsewhere in the chapter this is spelled as *In Tloke Nauoke*. etc.], the unity of a circle and square. First, one child lies flat on the floor while two others work with a string and a chalk. I guide them to draw a circle using the navel as the center and draw their attention to how the circle line flows through the fingertips and soles of the feet. At this point, I do not continue da Vinci's illustration showing how the human body is also a square when laid out as a cross. Rather I have the children use a compass to draw a perfect circle, cut it out, and fold it into quadrants. They then trace lines between the points where the quadrant line meets the edge of the circle, thus forming a square. It is important for them to grasp the relationship between forms. Later, they explore how this symbol is a geometric template for the Aztec Calendar and how it gets transferred from simple lines and angles into an astronomical computation wheel.

In a subsequent activity, I demonstrate how a square gives way to a circle. The children make a large square in the middle of the *Tlahtocan* and ponder how to divide it exactly in half without measuring. Eventually they conclude that it can be done with a diagonal line from corner to corner. Two lines in the same manner also create quadrants. The midpoint of the diagonal lines gives us a center to create a circle.

Calling the unity of these two geometrical forms *In Tloke Nauoke* introduces the children to information about history and the mindset of the ancient people who developed it. It also personalizes geometry for them. They see the formation of geometric shapes and measuring as extensions of themselves. In their identity exercises, they also see how they are *In Tloke Nauoke*. As Mexican Americans, they learn that this simple yet amazingly sophisticated symbol is part of their heritage. The use of this cultural awareness is well presented in the film *Stand and Deliver* when teacher Jaime Escalante tells his Chicano students that they are natural mathematicians. He demonstrates for one of the main characters the Mesoamerican way of finger counting to add and subtract (which I also do) and reminds him it was his ancestors the Maya who invented the number zero.

Use of this symbol is ongoing. We use it to introduce fractions and later to create fraction workbooks. The children also witness how the geometric constant Pi is derived through the relationship of a circle and a square. This year we did it for the whole school as part of International Pi Day organized at our campus by the UT at El Paso Education Department. The *In Tloke Nauoke* is also an example of fractal-like geometry, and numerous mathematical assignments are created to explore such a mysterious aspect of chaos theory.

The combination of *In Tloke Nauoke* shapes also gets transferred into the art center, where the children give these forms beauty through painting. Their art activities are divided into two categories: exploration and assigned. Through their assigned artwork, I incorporate the idea of the symbol so that they learn to use shapes to create new shapes. In their exploration, they evolve at different rates to incorporate this skill to paint landscapes, houses, people, and animals. Because their first encounter with the *In Tloke Nauoke* came from using their own body to form this unified symbol, art becomes more consciously personal without subtracting its creatively playful nature.

Finally, since the vast majority of my students are Mexican American they are able to appreciate the complexity and richness of their ancestral culture. In the last two years, I have had five students who, through discussion with their parents about what they learn in the classroom, have found out that their grandparents were fluent Nahuatl (Aztec) speakers. Information about their tangible indigenous past is something Mexicanos rarely share. When I talked with their mothers about this revelation, they told me that before they did not think this was important and therefore had not shared it with their children!

The Role of Teachers

Henry Giroux (1988) [AQ: Cited as 1988 in the reference list. Please check.] in *Teachers as Intellectuals* believes teachers have a special and unique opportunity to not only instruct but also to involve themselves in a transformative process through an interactive partnership between themselves, the children, parents, community, and society at large. When teachers become active coparticipants in an introspective and validating effort for the experiences children bring into the classroom, they become cocreators of new bodies of knowledge.

When teachers organize themselves around the learning rather than the teaching process by maintaining the children's viewpoint as well as a bird's-eye view of the classroom, they can be open to the authenticity of the children, to their uniqueness and needs at a particular moment. Acting on day-to-day realities such as moods, social concerns, interests, and forms of exploration, teachers can initiate learning without requiring children to fit into expectations that mechanize learning, such as the attempt to separate play from learning.

As teachers, we know that the notion that we stop learning when we start teaching is false. Teaching and learning are interactive. We are in fact participants in a covenant of hope when we realize that we are engaged in transformation rather than a mere transference of information. Teaching is not an act of replication but an act of creation in which we are not afraid to experience the unraveling of a finite experience into a chaos filled with infinite possibilities. Through symbolic, interactive, democratic dialogue, and activities we see learning emerge as a combination of two or more of these possibilities. Then learning becomes an act of faith and intuition as much as critical consciousness. This is *Xinachtli*.

UT El Paso professor, Lawrence Lesser (2005)[AQ: Cited as 2005 in the reference list. Please check.], reflecting his observations and those of some of his students concerning *Xinachtli* presentations, expressed the following:

Aceves teaches using mythic pedagogy that could safely pass for a holistic multicultural approach to a conventional observer's eye. But it goes deeper by allowing his elementary students to experience their culture as something that is dynamic and interdisciplinary history within a universal context. (p. 1)

Recently I was discussing with a fellow teacher the home situation of many of my students. I related the conditions of abuse, alcoholism, addiction, and parental absenteeism. She looked at me rather surprised and asked, "How do you find out so much about your students?" The question confused me for a moment, as I had not pondered on it myself. Somehow, I assumed all teachers learn about their students' home life. "We do," she explained, "but not with so much detail as you."

This brought home a pleasant though sometimes painful reality. The *Tlahtocan* and subsequent explorations across the curriculum creates a bonding community in which the children develop an emotional confidence to discuss painful things and develop a trust in the teacher to be able to share these things with him or her. It also creates in the children a social consciousness that they gradually perceive as being absent in their counterparts. The *Xinachtli* Project includes interaction between my students and those of teachers who are part of the project. The children often comment, "How come they (other students) don't know what we know?"

Recently in the *Tlahtocan* one student asked me, "Maestro (teacher), do you teach all your students what you teach us?" I said, "Of course." They looked at each other nodding as if in deep thought. "We," he said, "were just wondering."

Reflections

The lack of longitudinal study on the effects of student exposure to the *Xinachtli* Project exercises has

been one of my deepest frustrations. Four years ago, we arranged such a study through partnership with a professor at an out-of-state university. Due to procedural errors, the study had to be abandoned.

To continue the project, I currently depend on the positive results I see in my classroom, the overall satisfactory comments of faculty who participate, the expressed approval of parents who are pleased that their children are learning details about Mexican culture that they themselves did not know, and the overall campus academic success rate as measured by the state exams demanded by the No Child Left Behind (NCLB) law. However, the need to complete such a study of the Xinachtli Project's effects is needed if we are to expand it and find what modifications are needed for implementation.

Zimmerman et al. (1994) has already found enculturation, the degree to which one is embedded in one's culture, as a resilient factor among youth against "addictively harmful behavior" and "criminal delinquency." Whitbeck et al. (2001) also discovered that among Native American youth is "a positive association between child enculturation and school success" (p. 7).

I cannot think of a more empowering process for undoing whiteness in the classroom than to contextualize ancient constructs, the pedagogical instruments of an indigenous culture decimated by European imperialism and white racism, into a contemporary pedagogy, and have children learn not only the basics but also be empowered to examine their lives and world through a model of critical thinking, metaphorical expression, and self-identity.

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