Four Hundred Years of Evidence: Culture, Pedagogy, and Native America

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Introduction

School reform is many-faceted, but all school reform has one final common pathway—instructional activity. Whether reforms concentrate on class size, pre-service teacher education, national standards and goals, teacher development, community partnerships, or any other piece of education, nothing will have any effect on student learning except as it operates through the teaching-and-learning activities among teachers and students. So much school reform is debated at other levels; so little attention is given to that final common pathway toward learning. It is as though we are moving stone blocks around the construction site, at great expense and effort, though no one has a clear image of what the building should be. A vision of the ideal classroom should move policies toward its construction.

The crucial element of the classroom is pedagogy. *Pedagogy* here refers to *the organization of instructional activity and the patterns of teacher and student relationship*. In classrooms for Native Americans, students will achieve and prosper to the degree that the appropriate pedagogy is practiced. That pedagogy is well known, fully described, widely published, and extensively evaluated. That pedagogy consists of classroom expressions of traditional organization of instructional activity and patterns of adult and student relationships. Of course those traditions are adapted to formal educational purposes, and adapted to tribal and community variations. But fundamentally, Native Americans recognize such classrooms as valid, feel them as familiar, and improve their achievement in them.

In our national Capitol and in most State houses, culture-based education for Native Americans is seen as an annoying demand for indulgence by a stubborn minority that refuses assimilation. However, to study the evidence of the last 400 years of Native American successes and American schools' failure is to see something radically different. We see instead that a pedagogy derived from Native American socialization practices is superior to that practiced by schools of our common tradition, *even for mainstream students*.

The Historical Record

A wretched failure of social policy in America has plagued us since the first European colonists encountered the resident Native Americans. Whatever Euro-Americans have attempted in behavior influence and change has failed. U.S. public policy toward the Indians fluctuated but always failed. Sometimes the U.S. wanted to educate Native Americans for their benefit. It never succeeded. The merciless attempt to use public education to destroy Native culture also failed. Every attempt at behavior influence and change of Native American populations by Euro-American institutions has been impotent. This includes the infamous boarding schools of the earlier 20th century, into which Indian youth were forced. The boarding schools did wreak havoc on Indian native languages, and on the cultural continuity of parenting skills, but their academic successes were slight, and their purpose of destroying Indian identity failed utterly.

The task of this paper is to examine the few successful instances of behavior influence and change in this domain and historical period. There are two successes, both richly documented for the 400 years from the 17th through the 20th centuries. Both were achieved by Native Americans themselves, and consequently of crucial importance to our understanding of the effectiveness of Indian methods of teaching and learning.

Sequoia, a Cherokee Indian in the 19th century United States, accomplished one of the great individual intellectual feats in recorded history. He invented a complete orthography for an oral language, and within a blink of history's time, his people were literate (Foreman, 1938; Montheit, 1984). One of the world's signal triumphs of a whole people was the Cherokee achievement of a virtually immediate universal literacy. How was such a feat of behavior influence and change brought about? How did the schools accomplish such a heroic feat of education?

They did not. Schools had nothing to do with it. How did the Cherokee leadership, their families, and communities organize their literacy learning? Cherokees learned literacy at the fireside and the roadside. In the 1820s, thousands of illiterate Cherokees were teaching each other, wherever families were, in their cabins and on the trails. Families taught each other, learned together. Schools had no part in it. Reliable stories exist for hundreds of children and adults who learned to read and write in several days or weeks, and 90% of Cherokees became literate within 10 years of Sequoia's invention:

> (The Cherokee syllabary) was never taught in schools. The people have learned it from one another; and that too without books, or paper, or any of the common facilities for writing or teaching. They cut the letters, or drew them with a piece of coal, or with paint. Bark, trees, fences, the walls of houses, etc., answered the purpose of slates… That the mass of a people, without schools or books, should by mutual assistance, without extraneous impulse or aid, acquire the art of reading, and that in a character wholly original, is, I believe, a phenomenon unexampled in modern times (Foreman, 1938, p. 29).

Traditional American schools cannot reliably produce high reading proficiency in Native American children to this day.

For four hundred years, New World schooling failed, and continues to fail to 'educate' Native Americans. During that same period, Native Americans succeeded in socializing not only themselves, *but also their white captives*. We have records of the processes they employed. Here is the testimony of Benjamin Franklin, a major intellectual and political figure of the Enlightenment. Statesman, scientist, inventor, and writer, Franklin also was an early behaviorist who kept a self-assessment record of his progress toward personal goals. Thus we must take his observations seriously:

> When an Indian child has been brought up among us, taught our language, and habituated to our Customs, yet if he goes to see his relations and make one Indian Ramble with them, there is no perswading him ever to return. [But] when white persons of either sex have been taken prisoners young by the Indians, and lived a while among them, tho' ransomed by their Friends, and treated with all imaginable tenderness to prevail with them to stay among the English, yet in a Short time they become disgusted with our manner of life, and the care and pains that are necessary to support it, and take the first good Opportunity of escaping again into the Woods, from whence there is no reclaiming them (Benjamin Franklin to Peter Colinson, May 9, 1753, in L. W. Labaree, W. J. Bell, H. C. Boatfield, & H. H. Fineman, 1959, 4:481-482; as cited in Axtell, 1981, p. 172).

Not all white captives were gently influenced to change their behavior to the native pattern; some were held as slaves and coerced. But many were captured to replace lost tribal members, and were drawn into the socialization nexus of the captor tribe.[1] Native Americans changed captives into 'white Indians.' They were more successful with children than adults, but there are reported successes at all ages. Data come from the many personal narratives of former captives (e.g., Derounian-Stodola, 1998; Drimmer, 1961; Zesch, 2004). How was this achieved? Through a condition involving joint activity of captive and captors, a thorough teaching of language, communication through ceremonial and other forms of visual symbolism, full discussion of values in the context of activity, whether that was bow-and-arrow, tracking, tanning, or doing laundry, fully assisted performance by modeling (ample opportunity for observational learning) followed by performance feedback, and almost invariably in the successful instances, loving support and dialogue with an adopted mother or lover. This condition, even if instituted after an initial period of coercion and slavery, with few exceptions achieved a permanent alteration of the captive's behaviors, values, and identity.

It is logically absurd to argue that Native teaching and learning processes are ineffective, in the light of this evidence. The effectiveness has been consistent, dramatic, frustrating, and incontrovertible, not only for informal socialization, but for academic teaching and learning of basic literacy. The pedagogical processes employed in these two instances are very similar, and I have no doubt that if we had more detailed records of that roadside/fireside teaching, more similarities would be revealed. As we will see below, *the basic processes which*

White Indians and Cherokee achieved literacy are those associated by contemporary research on effective pedagogy for Native American classrooms.

A Historical Overview of Culture and Education Studies

Research on culture and education originated in the same social climate that spawned the civil rights movement. During the half-century that followed, that research domain has gone through several stages. *Stage One:* Researchers and program developers concentrated on adapting schools to specific cultures. This typically involved studying a culture intensely, particularly in adult-child relationships and socialization practices. Modifications of school procedures to achieve greater cultural compatibility were studied (e.g., Tharp, Jordan, Speidel, Au, Klein, Calkins, Sloat and Gallimore, 1984). *Stage Two:* When sufficient cultural cases had accumulated, it was possible to see which cultural features appeared to vary, and which appeared constant (Tharp, 1989a). For example, an emphasis on language development appeared constant across culturally based recommendations; whereas motivational patterns varied sharply by culture. At that time, it also became evident that researchers in different cultures emphasized quite different aspects. Asian studies focused most often on family involvement. Latino studies focused heavily on bilingual issues. African American research at that time focused primarily on issues of equity. Most notable for our present purpose, *Native American studies focused predominantly on pedagogy.*

Stage Three of culture and education studies grew from changing demographics in American society that reached a tipping point. For policy, teacher education, and pedagogy especially, it became crucial to understand how to teach in multicultural, multilingual classrooms that are proliferating to this day. During this third stage, my associates and I began an inquiry to rotate our kaleidoscope of evidence, and search for universal principles of pedagogy for underachieving, placed-at-risk groups *across cultures*. We discovered and proposed Five (and Seven; see below) Principles, which by 1996 we were publishing widely as Standards for Effective Pedagogy. The discovery and testing method employed was *analytic deduction,* or the Method of Universals.

Previously used in studies of opiate addiction (Lindesmith, 1957), dangerous criminality (Athens, 1992), and disease (see Rhodes, 1999) analytic deduction requires the researcher to attempt to formulate propositions, which apply to all instances without exception:

> Crystallized, the advantages of this method are 1) theories can be disproved and compared against evidence; 2) knowledge can grow as old propositions are revised in the light of negative evidence; and 3) it requires the investigator to closely link theory and fact, as exceptions demand revisio (Znaniecki, 1934, quoted in Lindesmith, 1957, p. 19).

The logic of the method is that of William James' test for the White Crow. "(If) you wish to upset the law that all crows are black, you must not seek to show that no crows are; it is enough if you prove one single crow to be white" (James, 1969, p. 41). Surely the most unforgiving of methods, this method imposes the

greatest discipline on theorists/researchers: to diligently seek exceptions to our propositions, thus striving to prove ourselves wrong, but freeing us to formulate more refined, more accurately phrased propositions. Thus we accept in this method the need for diligent and persistent discipline.

This third stage continued in our research laboratories of CREDE (Center for Research on Education, Diversity & Excellence) for a period of four years, during which we conducted many studies designed to illuminate the processes and conditions under which the Pedagogy Standards operate. During this time we continued to scour the research-and-development literature for exceptions to our posited list of universals. In all instances of 'successful' programs (as defined by the authors) for at-risk students, of whatever method employed or evidence accepted, we found none that did not contain two or more of our Standards—across all subject matters, grade levels, and populations. As part of our search for exceptions, we discussed them widely in many venues: professional meetings, parent meetings, research presentations, colloquia, radio and television call-in programs, and indeed wherever we could, asking for assistance in locating apparent exceptions. Having found none, we moved to Stage Four.

Stage Four involved assembling the Pedagogy Standards into an integrated program, including teacher development, assessment for fidelity of implementation, and evaluation. The CREDE website[2] maintains a rolling Technical Report G-1, summarizing pertinent research (Tharp, 2004).

The overall review of the research and development literature involved in the Method of Universals comprised hundreds of citations. The list in Appendix A is more narrowly focused on studies that specifically bear on the Standards for Effective Pedagogy in populations of American Indians, Alaska Natives, Native Hawaiians, or other related peoples. The studies span twenty-five years, a variety of research methods and populations, and a consistent demonstration that the Standards for Effective Pedagogy are associated with higher student achievement.

The Standards for Effective Pedagogy

Below are listed the Standards, followed by example indicators that illuminate them.

I.   Joint Productive Activity: Teacher and students producing together; facilitate learning through joint activity among teacher and students. The teacher:

   1. Designs instructional activities requiring student collaboration to accomplish a joint product.
   2. Matches the demands of the joint productive activity to the time available.
   3. Arranges classroom seating to accommodate students' individual and group needs to communicate and to work jointly.
   4. Participates with students in joint productive activity.

5. Organizes students in a variety of groupings, such as by friendship, mixed academic ability, language, project, or interests, to promote interaction.
6. Plans with students how to work in groups and move from one activity to another, such as from large group introduction to small group activity, for clean up, dismissal, and the like.
7. Manages student and teacher access to materials and technology to facilitate joint productive activity.
8. Monitors and supports student collaboration in positive ways.

II. Developing Language and Literacy across the Curriculum: Develop competence in the language and literacy of instruction in all content areas. The teacher:

1. Listens to student talk about familiar topics, such as home and community.
2. Responds to students' talk and questions, making "in-flight" changes that directly relate to students' comments.
3. Assists language development through modeling, eliciting, probing, restating, clarifying, questioning, and praising, as appropriate in purposeful conversation and writing.
4. Interacts with students in ways that respect students' preferences for speaking and interaction styles, which may be different from the teacher's, such as wait-time, eye contact, turn taking, and spotlighting.
5. Connects student language with literacy and content area knowledge through speaking, listening, reading, and writing activities.
6. Encourages students to use content vocabulary to express their understanding.
7. Provides frequent opportunities for students to interact with each other and with the teacher during instructional activities.
8. Encourages students' use of first and second languages in instructional activities.

III. Teaching in Context: Connect teaching and curriculum to experiences and skills of students' home and community. The teacher:

1. Begins with what students already know from home, community, and school.
2. Designs instructional activities that are meaningful to students in terms of local community norms and knowledge.
3. Learns about local norms and knowledge by talking to students, parents, and community members, and by reading pertinent documents.
4. Assists students to connect and apply their learning to home and community.

5. Plans jointly with students to design community-based learning activities.
6. Provides opportunities for parents to participate in classroom instructional activities.
7. Varies activities to include students' preferences, from collective and cooperative to individual and competitive.
8. Varies styles of conversation and participation to include students' cultural preferences, such as co-narration, call-and-response, and choral, as well as observation.

IV. Teaching Complex Thinking: Challenge students toward cognitive complexity. The teacher:

1. Assures that students, for each instructional topic, see the whole picture as the basis for understanding the parts.
2. Presents challenging standards for student performance.
3. Designs instructional tasks that advance student understanding to more complex levels.
4. Assists students to accomplish more complex understanding by relating to their real-life experience.
5. Gives clear, direct feedback about how student performance compares with the challenging standards.

V. Instructional Conversation: Engage students through dialogue. The teacher:

1. Arranges the classroom to accommodate conversation between the teacher and a small group of students on a regular and frequent schedule.
2. Has a clear academic goal that guides conversation with students.
3. Ensures that student talk occurs at higher rates than teacher talk.
4. Guides conversation to include students' views, judgments, and rationales, using text evidence and other substantive support.
5. Ensures that all students are included in the conversation according to their preferences.
6. Listens carefully to assess levels of students' understanding.
7. Assists students' learning throughout the conversation by questioning, restating, praising, encouraging, and so forth.
8. Guides the students to prepare a product that indicates the Instructional Conversation's goal was achieved.

The Epistemological Status of these first Five Standards, versus Standards Six and Seven, Generic for American Indian Communities

The Five Standards above have met the continual challenges of the method of universals, across all the cultural groups in which pedagogical research has been reported. (It should be borne in mind that the most vigorous pedagogical research

has been carried out in Native American cultural settings.) The next two Standards, VI and VII, also meet the test of universality, but *only within Native American pedagogical research*. That is, these next two Standards are not emphasized—and indeed rarely appear in studies conducted on other populations. As disorderly as this Five vs. Seven Standards may appear, the derivation of the Standards is empirical, and Five/Seven is the actual condition of the corpus of knowledge based on research-and-development on pedagogy. The Method of Universals can work only with existing evidence.

After presenting Standards VI and VII in this series, we will examine the reasons why Native pedagogy emphasizes these two features, and other cultures largely ignore them.

VI. Modeling and Demonstration: Learning Through Observation. The teacher:

1. Uses the language of instruction (and home language when possible) in all interactions with students.
2. Interacts with students in socially appropriate ways that model conventions and courtesies of conversation.
3. Uses demonstration often to explain academic vocabulary and concepts.
4. Provides opportunities for students to observe her performances, and those of accomplished students

VII. Student Directed Activity—Encourage Student Decision Making. The teacher:

1. Involves students in the design and development of teaching and learning tasks.
2. Arranges for students to take an active teaching role with their peers.
3. Assures that students use their expertise and funds of knowledge in the classroom.
4. Engages students in examining and evaluating their own work and the work of their peers through daily discussions of class and individual progress before dismissal.
5. Promotes student self-evaluation through use of interactive journaling and other feedback techniques.

Standards Six and Seven, Generic for American Indian/Alaska Communities
Standards Six and Seven are either explicit or embedded in effective programs for American Indian/Alaskan communities, whether in Alaska, Canada, or the lower 48 United States. This should not be surprising, since they are closely tied to basic views of children, and basic characteristics of child socialization, that appear to be shared by Native cultures.

Why do they not systematically appear in studies of other cultures? In my view, it is not because they are peculiar processes, but because schools of the

common tradition have so sharply extirpated them that they escape the notice or consideration of educational reformers. Why then are these features so salient in Native American educational programs? Because these two Standards reflect powerful and distinctive Native cognitive and social characteristics.

The Cultural Bases of Standard Six

Traditional and contemporary Native American socialization emphasizes learning by observation. This "observational learning complex" is closely tied to the well-documented visual-learning patterns of American Indian children, and its holistic cognitive style (see Tharp, 1994 for a review of the extensive literature). How does this pattern of thinking come about? The holistic pattern of thought is a complex, historically generated, that can be seen in many inter-supportive aspects: perceptual, problem-solving, semiotic, representational, sociological, and interpersonal dimensions are each aspects of a unified whole. Different writers have emphasized one or more of these dimensions; my purpose here is to emphasize their unity and mutual interdependence.

A fundamental aspect of this complex is observational learning: Cazden and John (1971) discuss this preference for "learning by looking more than learning through language," (p. 256)—an aspect of Indian childrens' superior visual abilities. Many writers discuss that among Native American peoples, there is a learning system of private, imagined practice that allows learning without public failure; Cazden & John (1971) discuss this as "competence before performance."

This complex necessarily includes a *sociological* dimension: for a society to rely on observational learning children are incorporated into the activity settings of the society. Technological cultures often require verbal explanation before children can understand adult activities; in the "observational learning complex" the adult behaviors can be understood with only occasional verbal explanation.

A major feature of this pattern appears to be a visual, as opposed to a verbal, proclivity in *perception* as well as in abilities. This generalization is consistent with virtually all relevant published work. This visual rather than verbal proclivity maps easily onto the holistic vs. analytic patterns, because visual perception presents itself holistically; language (both oral and written) presents itself sequentially, in a linear pattern of emerging parts. In any event, the holistic pattern of cognition is associated with the entire "observation-learning" complex, which illuminates the wrenching that Native American children experience in conventional education, in which the entire world of being is violated by another equally powerful but alien complex-the technological, verbal, sequential, segmented, publicly-performing society where all day long children are isolated from all adults except the teacher of the school.

The Cultural Bases of Standard Seven

The way classrooms are organized influences Native American student participation. Native students are comfortable and more inclined to participate in

activities if they have a voice or choice in generating, organizing, or directing them. Native American cultures accord respect to youthful autonomy and decision-making. I have found no group of cultures that exceed the freedom extended even to their young children. Since early contact, their independence and non-interference with one another has been ill-understood by Euro-Americans, who simply could not perceive that hierarchical power structures are not present in Native social organization, and that whatever people do is up to them. This extends downward to very young children; after all, if individual integrity, competence, and problem solving are to be learned, how else should they be taught other than by allowing and supporting them? Not only the logic is convincing, but allowing student initiative and choice into the conduct of instructional activities energizes and engages students who are accustomed to responsibility.

Measurement of the Standards:
The Standards Performance Continuum

The Standards Performance Continuum (SPC) was developed to assess fidelity of implementation of the Standards for Effective Pedagogy (see Table One). Its uses include (a) professional development, (b) assessment, and (c) comparisons across time, institutions, and student achievement outcomes. The SPC is a five-point scale with values corresponding to operationally defined indicants of meaningful differences in teacher behavior, developed to reliably and validly assess a developmental continuum in enacting the standards for effective pedagogy, ranging from the limited use of the standards to the simultaneous enactment of multiple standards. Each higher level of skill subsumes the skills of the lower levels. Validity and reliability coefficients are sufficient for confidence in its use (Doherty, Hilberg, Epaloose, & Tharp, 2002).[3,4] Higher SPC scores are uniformly associated with higher student achievement on high-stakes measures.

Basic Theory and Implications

The conceptual validity of the Standards for Effective Pedagogy is secured by their correspondence with universal processes of basic socialization—that is, the processes by which societies create new members, whether the societies are a tribe, a chess club, a church, or a family. The new members may be recruits, babies, immigrants, or captives. Cultural-historical-activity theory (CHAT) reveals the processes: senior and junior members engaging in joint activity that is directly meaningful to the society's goals; talking about it together, and otherwise signifying the meaning and emotions of the society's values; and assisting the novices whenever they need it. It is the way Native Americans perpetuate their own cultures, and the way they produced White Indians. It is the way mothers teach children to cook, warriors teach young men to fight, and scientists teach their apprentices. These processes have made doctoral education in the United States pre-eminent in the world. These processes are those used by educated mothers to prepare their children for schools that demand verbal intelligence (Hart & Risley, 1995)

Table 1
Standards Performance Continuum for Effective Pedagogy

	(0) Not Observed	(1) Emerging	(2) Developing	(3) Enacting	(4) Integrating
General Definition:	*The standard is not observed.*	*One or more elements of the standard are enacted.*	*The teacher designs and enacts activities that demonstrate a partial enactment of the standard.*	*The teacher designs, enacts, and assists in activities that demonstrate a complete enactment of the standard.*	*The teacher designs, enacts, and assists in activities that demonstrate skillful integration of multiple standards simultaneously.*
Joint Productive Activity *Teacher and Students Producing Together*	Students work independently of one another.	Either (a) students occasionally assist one another while they work on their own products; (b) are instructed in how to work in groups; or (c) contribute individual work, not requiring collaboration, to a shared product.	Either (a) the teacher and students collaborate on a shared product in a whole-class setting, or (b) students collaborate on shared products in pairs or small groups.	The teacher and a small group of students collaborate on a shared product (all students will have the opportunity to work with the teacher in a small group).	The teacher designs, enacts, and collaborates in joint productive activities that demonstrate skillful integration of multiple standards simultaneously.
Language & Literacy Development *Developing Language and Literacy Across the Curriculum*	Instruction is dominated by teacher talk.	Either (a) the teacher explicitly models appropriate language; (b) students engage in brief, repetitive, or drill-like reading, writing, or speaking activities; or	Students have structured opportunities for extended reading, writing or speaking.	Students engage in extended reading, writing or speaking activities that require them to use academic language, AND the teacher assists students by questioning, rephrasing, or modeling.	The teacher designs, enacts, and assists in language development activities that demonstrate skillful integration of multiple standards simultaneously.
Contextualization *Making Meaning— Connecting School to Students' Lives*	New information is presented in an abstract, disconnected manner.	(c) students engage in social talk while working. Either (a) the teacher includes something familiar to students in instruction, (b) connects classroom activities by theme, or (c) includes parents or -	The teacher makes explicit connections between students' prior knowledge and the instructional activities.	New activities draw extensively on students' prior knowledge and experience.	The teacher designs, enacts, and assists in contextualized activities that demonstrate skillful integration of multiple standards simultaneously.

Table 1 (continued)

	(0) Not Observed	(1) Emerging	(2) Developing	(3) Enacting	(4) Integrating
General Definition:	The standard is not observed.	One or more elements of the standard are enacted.	The teacher designs and enacts activities that demonstrate a partial enactment of the standard.	The teacher designs, enacts, and assists in activities that demonstrate a complete enactment of the standard.	The teacher designs, enacts, and assists in activities that demonstrate skillful integration of multiple standards simultaneously.
Challenging Activities / Teaching Complex Thinking	Activities rely on repetition, recall, or duplication to produce factual or procedural information.	Either (a) the teacher accommodates students' varied ability levels, (b) sets standards for student performance, or (c) provides students with feedback on their performance, though tasks are based on factual or procedural information.	Instructional activities are challenging1 (see definition for Challenging Activities in Glossary).	Instructional activities are challenging.[3] Also, the teacher assesses and assists student understanding through modeling, instructing, encouraging, or questioning; and students receive feedback on their work.	The teacher designs, enacts, and assists in challenging activities that demonstrate skillful integration of multiple standards simultaneously
Instructional Conversation / Teaching Through Conversation	Lecture or whole-class instruction predominates.	With individuals or small groups, the teacher either (a) interacts in ways that are comfortable for students, (b) uses questioning, listening or rephrasing to elicit student talk, or (c) converses on a nonacademic topic.	The teacher converses with a small group of students on an academic topic and elicits student talk by questioning, listening and responding to student responses.	The teacher has a planned, goal-directed conversation with a small group of students on an academic topic; elicits talk by questioning, listening and responding; and inquires about students' views, judgments, or rationales.	The teacher designs, enacts, and assists in instructional conversations that demonstrate skillful integration of multiple standards simultaneously.

Table 1 (continued)

	(0) Not Observed	(1) Emerging	(2) Developing	(3) Enacting	(4) Integrating
General Definition:	*The standard is not observed.*	*One or more elements of the standard are enacted.*	*The teacher designs and enacts activities that demonstrate a partial enactment of the standard.*	*The teacher designs, enacts, and assists in activities that demonstrate a complete enactment of the standard.*	*The teacher designs, enacts, and assists in activities that demonstrate skillful integration of multiple standards simultaneously.*
Modeling *Learning Through Observation*	Students begin working immediately following a verbal explanation.	The teacher, or student, models behaviors, thinking processes, or procedures, but does not provide an opportunity for students to practice.	The teacher provides a model of a completed product that students then make, or models the behaviors, thinking processes, or procedures necessary for the task.	The teacher provides a model of the intended product, or models the behaviors, thinking processes, or procedures of the task, and assists students practice.	The teacher designs, enacts, and assists in modeling activities that demonstrate skillful integration of multiple standards simultaneously.
Student Directed Activity *Encourage Student Decision Making*	Students work on tasks designed and assigned by the teacher.	Students choose the subject or topic for an assigned task.	Students select from among activities developed by the teacher.	Students generate learning topics or develop learning activities.	The teacher designs, enacts, and assists in student directed activities that demonstrate skillful integration of multiple standards simultaneously.

In traditional cultures that are still alive, such as Indian reservations and in the villages of the circumpolar north, these processes create new culture members no matter what federal policy dictates. But then their children go to school. The traditional processes are seldom found in K-12 education, which even on reservations is controlled by federal and state policy. Native children find themselves in a strange environment, which is regimented, includes little joint activity, assistance, dialogue, or emotion, and is authoritarian and disdainful of low achievement.

Conclusions and Implications

The Standards for Effective Pedagogy are distilled from studies of schooling of minority youth, under-achieving culturally and linguistically diverse classrooms, including those of Native Americans. But are the principles valid only for minority students? Far from it; the principles are entirely consistent with natural teaching and learning, as practiced by *Homo sapiens* traditionally, in all informal community, cultural, productive and familial settings since the dawn of time and on every continent. In fact, these principles also describe effective education for majority-culture students. Traditional schools have not practiced such education, because the schools have relied on the family and community experiences of majority-culture adults to provide the activity, the conversation, the language development, and the shared context upon which the schools depend.

This is no longer true, in our culturally and linguistically diverse nation. The schools must now provide the common experience, activity, language, and conversation that learners require, both for individual development and the development of a common, shared and mutually endorsed community.

The irony of our current policy environment is astonishing. The most effective school pedagogies have been revealed by the study of Native American classrooms that use their traditional cultural patterns of activity and interaction. These methods are demonstrably effective not only for themselves but for all minority at-risk populations. They are squarely congruent with universal features of primary and informal socialization, and thus the most likely to be successful in *all* classrooms, even mainstream.

The further development of culture-based education should be encouraged, in ways that allow fair evaluations and scaling up. Retraining teachers will be slow, but it is possible. Examples of what can be achieved are now living in schools—few and scattered, but enough to build on. The existing research evidence warrants serious research-and-development support.

Native Americans comprise a relatively small proportion of the total American population. Is there a reason why the nation should bother? Yes: *To learn*. The communities of Native Americans, uniquely, can be the seedbed for infusing fundamental human processes of teaching/learning into public education. I do not propose that the majority become White Indians. Rather, through such a program we may all find a way for everyone's children to achieve, and thus perpetuate the best features of each society.

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Endnotes

[1] This was particularly true during the wars with German settlers in 19th century Texas, when Comanche captured whites to replenish their population, diminished by casualties (Zesch, 2004).

[2] http://crede.berkeley.edu

[3] Strictly speaking, the SPC is an ordinal scale. The data generated by the SPC, however, do not consist of ranks, but of ratings with values representing presumably equal intervals. From a statistical perspective, the distinction between ordinal and interval data is problematic; the choice between the use of parametric and nonparametric tests in its use are complex, but have been clarified and guidance provided (Lee, 2004).

[4] Psychometric characteristics has been reported for the Five Standards, but not as yet for Standards Six and Seven.

[5] Students generate new knowledge by using information to perform complex tasks that require various forms of elaboration such as analysis, synthesis or evaluation.

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Appendix A
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Appendix B

Glossary of Terms

Academic goal: In an Instructional Conversation, the academic goal is the development of thematic or conceptual understanding.

Assistance: Assistance is a two part process in which the teacher first assesses student knowledge and skills, then responsively assists development. Types of assistance may include: (a) Modeling—Providing a demonstration; (b) Feeding Back—Providing information about student performance as compared with a standard; (c) Contingency Management:—Providing rewards or punishments contingent on student performance; (d) Questioning—Providing questions that guide students to advance their understanding; (e) Instructions—Providing clear verbal directions for performance; (f) Cognitive Structuring—Providing explanations or rules for proceeding; or (g) Task Structuring—Providing assistance by segmenting or sequencing portions of the task.

Challenging Activities—Activities that advance student understanding to more complex levels: (a) the 'why' is addressed, not merely the 'what' or the 'how to'; (b) the activity requires that students generate knowledge, or *use* or *elaborate* on information provided (apply, interpret, categorize, order, evaluate, summarize, synthesize, analyze, explore, experiment, determine cause and effect, formulate and solve problems, explore patterns, make conjectures, generalize, justify, make judgments); (c) the teacher connects the content or activity to a broader concept or abstract idea to advance student understanding; or (d) the teacher provides instruction in critical thinking, or problem solving or metacognitive strategies.

Collaboration: Joint activity that results in shared ownership, authorship, use, or responsibility for a product. It can also include division of labor for coordinated sub-sections. However, mere turn taking does not constitute division of labor and, to be considered collaboration, an activity must include interaction between participants. Coordinated activities such as morning message or calisthenics are rated at the Emerging level for JPA.

Content vocabulary: Language development may occur in the context of literacy or English language lessons. Therefore, we broadly define content vocabulary to include (a) academic language use in literacy lessons, or (b) standard English language when that is the goal of instruction.

Instructional Conversation (IC): ICs are inclusive of all participants whose contributions are connected to, or extend, the comments and ideas of other participants. In contrast, directed-discussions focus less on developing conceptual

understanding and more on known-answer questions and skill development. Instructional conversation focuses on broad topics, main ideas, themes or concepts, is responsive to student contributions, includes participation structures that are familiar to students, and includes open-ended questions and sustained dialogue on a single topic. A precondition or precursor of conversation is discourse between teacher and student(s) that is extended to at least two speech turns each, with each turn consisting of more than just providing an answer or providing a fact (responses to convergent teacher questions).

Incidental connections: The teacher (a) makes connections between students' experience or knowledge from home, school, or community and the new activity/information on an ad hoc basis to assist understanding, or (b) prompts students to make connections.

Integrates the new activity/information with what students already know from home, school, or community: (a) students' knowledge or experience is integrated with new information, (b) the basis of the activity is personally relevant to students' lives; or (c) students apply school knowledge in an authentic activity.

Integration: A single activity integrating three or more standards at the enacting level.

Product: Products may be tangible or intangible. Examples of tangible products: worksheet, essay, report, pottery, word-web, a math problem solved on the blackboard, play, skit, game, debate. Intangible products may be found in such activities as 'story time,' introductory lectures, or some ICs (the product is an accurate or elaborated understanding of a concept, procedure, idea), or some PE activities (increased physical fitness is the product, though not joint). The intangible products are an achieved physical, psychological, or social state that integrates a series of actions.

Standards for student performance: Performance standards go beyond what to do and address the *quality* of student work. Standards may be in the form of a checklist or a rubric, or may be implicitly expressed through teacher expectations.

Students' views (questions students on their views): In an Instructional Conversation, questioning students on their views is inclusive of students' prior knowledge or experience related to the goal of the conversation.