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ABSTRACT

This paper reviews studies detailing formal and nonformal instruction of Native American children by Native American teachers and compares attributes common to traditional Native education with principles of the constructivist approach to instruction. Five pedagogic principles are considered: (1) teacher as facilitator, guiding rather than telling; (2) focus on learner-developed understanding; (3) problem-based instruction, with the problems situated in the learner's culture and lived experiences; (4) cooperative rather than competitive instruction; and (5) time-generous rather than time-driven instruction. Culturally responsive pedagogy can only be practiced in culturally sensitive environments where ways of perceiving, believing, acting, and evaluating are shared. The literature review suggests that Native American pedagogy and constructivism share common beliefs and perceptions about teaching and learning. Therefore, constructivist ways of teaching promise to be culturally responsive to cultures valuing Native American pedagogy. Ways in which constructivism and Native American pedagogy conflict with traditional pedagogic assumptions of the dominant culture are outlined, and possible reasons are offered as to why constructivism was developed among dominant-culture educators. Contains 32 references. (SV)

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INVESTIGATING THE CORRESPONDENCE BETWEEN NATIVE AMERICAN PEDAGOGY AND CONSTRUCTIVIST BASED INSTRUCTION

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INVESTIGATING THE CORRESPONDENCE BETWEEN NATIVE AMERICAN PEDAGOGY AND CONSTRUCTIVIST BASED INSTRUCTION

The Need for Culturally Responsive Instruction

Surprisingly little attention has been given to the teaching methods used in teaching ethnic minority students in this country, particularly when the notion of culturally relevant curriculum materials has been around as long as it has. It is as if we have been able to recognize that there are cultural differences in what people learn, but not in how they learn. (Phillips, 1982)

The preceding quote serves as a lens through which this review of literature is focused. Here, Phillips succinctly identifies a critical issue - the importance of culturally compatible teaching methods. It is this issue that grounds my investigation of the pedagogical compatibility between Native American ways of teaching and constructivist based instruction. Within this paper both Native American and constructivist pedagogy will be described and the commonalities between the two will be discussed.

Having proposed that there is a generalized Native way of teaching, it is important to recognize that Native Americans represent more than 280 different tribal groups (Butterfield, 1983; Stuck in the Horizon, 1989) and that each tribal group possesses varying linguistic, cultural, social, political, and economic dimensions. Consideration of such diversity forces one to be cautious when overgeneralizing across tribes (Brasswood & Szaraniec, 1983). However, many studies point out that there are notable consistencies among Native peoples (Tharp & Yamauchi, 1994; Cahape & Howley, 1992; Indian Nations at Risk Task Force, 1992). This paper, like those referenced above, identifies commonalities, specifically informal and formal teaching practices, shared by Native American teachers across tribes. These practices comprise what is referred to within this paper as Native American pedagogy.

Perspectives on the Learner's Role

Before one is able to gain an understanding of traditional Indian teaching, it is important to discuss the Native American perspective of the learner's role. Tafoya (1982) helps illuminate this perspective by relating the incident of a Navajo elder responding to a young boy's query as to why it snows in Montezuma Canyon. The elder responded by telling him a story about a boy who discovered a strange flaming object:

They (the Holy People) would not allow him to keep even a part of it, but instead put him to a series of tests. When he was successful at these tests, they promised they would throw all of the ashes from their fireplace into

Montezuma Canyon each year. "Sometimes they fail to keep their word, and sometimes, they throw down too much; but in all, they turn their attention toward us regularly, here in Montezuma Canyon" (p. 27).

When the boy heard the story, he accepted the explanation of why it snowed in Montezuma Canyon but then wanted to know why it snowed in Blanding, another Navajo area. The old man quickly replied, "I don't know. You'll have to make up your own story for that." To the anthropologist (Toelken) who had witnessed this exchange, the old man later commented that, "It was too bad the boy did not understand stories," and he explained that this was not really about the historical origin of snow in Montezuma Canyon or any other place, but a story about the proper reciprocal relationship between man and other beings. He attributed the boy's failure to grasp the meaning of the story to the influence of white schooling (p. 28).

Tafoya's explanation of this interchange situates the learner as an active participant, not merely a passive recipient of knowledge:

This is very much a part of Native American teaching: that one's knowledge must be obtained by the individual . . . gaining of that knowledge does not come from only listening to elders, or seeing what others have done. . . . The seeker must open up himself to himself. . . . The insights and comprehensions must be achieved internally (p. 28).

Others (Leavitt, 1983; Scollon & Scollon, 1981) have investigated both the social and cognitive aspects of storytelling as well as other traditional Native American teaching practices, and, like Tafoya, have concluded that abstracting basic rules and principles is left to participants according to their experience levels and perspectives.

This conclusion situates the learner not as a dependent student but as an autonomous learner. Understanding this perspective becomes vitally important when analyzing principles of Native American pedagogy; learner autonomy is covertly embedded in indirect, cooperative, sense-making, culturally situated, and time-generous instruction.

The constructivist perceptions of the learner and learner behaviors parallel those described above and conflict with dominant culture perspectives. Historically, in American classrooms, the learner has been viewed as "an empty vessel" or "blank slate" and learning has been thought to be a repetitious "mimetic" activity (Jackson, 1986). In contrast, constructivism emphasizes the learner as an active maker or constructor of meaning (Glatthorn, 1994). Brooks and Brooks (1993), in their book, **A Case for Constructivist Classrooms**, a source frequently referenced in this paper, explain that:

The constructivist vista is far more panoramic and elusive. Deep understanding,

not imitative behavior is the goal In the constructivist approach, we do not look for what students can repeat, but for what they can generate, demonstrate, and exhibit (p.16).

Comparing Pedagogies

In the following section, four research studies detailing instruction of Indian children by Indian teachers will be reviewed. Though the studies share attributes common to traditional Native American instruction, such as the autonomous role of the learner, each study was selected to exemplify a particular component or principle of such pedagogy, and each study is identified by the principle it exemplifies. Constructivist correspondence with each principle will also be discussed. The pedagogic principles to be considered are: 1) teacher as facilitator: guiding rather than telling; 2) sense-making instruction; (3) problem-based instruction with problems situated in the culture and lived experiences of the learner; 4) cooperative rather than competitive instruction; and 5) time-generous rather than time-driven instruction.

Principle 1 Teacher as Facilitator: Guiding Rather than Telling

Ericks-Brophy and Crago (1993) analyzed classroom discourse in six Inuit-taught kindergarten and first-grade classrooms in northern Quebec. The findings of this study suggest that unlike mainstream classrooms based on behaviorist learning theory where discourse is typically organized around elicitation sequences initiated and controlled by the teacher (Cazden, 1988; Silliman & Wilkinson, 1991), Inuit teachers facilitated group responses and peer modelling to decentralize teacher intervention and de-emphasize the authoritarian role of the teacher. The emphasis in the Inuit classrooms was on listening to others as opposed to individual responses and performance. This allowed teachers to capitalize on using peer models to explore emerging concepts as well as rethink misconceptions. In their interviews, the teachers described their role in terms of the facilitation of peer exchanges:

- to encourage my students to get along and help each other
- that my students learn to cooperate
- that my students respect each other
- to keep all the children equal
- to be a good example to my students

The researchers suggested that this interactional pattern is culturally congruent with the larger Inuit society where conversational topics are not controlled by individual speakers and verbal interactions are typically focused on the general audience and do not tend to spotlight individual participants. They concluded:

Teachers avoided singling students out for evaluation, praise or correction in front of their peers and were careful not to emphasize or spotlight individual performance in the public arena, allowing students to participate equally in classroom exchanges without pressure or loss of face. In this way, students were able to take greater responsibility for their own learning and the progress of the group. At the same time, they learned central Inuit values concerning the importance of group cooperation, the equality of all group members, and respect for others.

The findings of this study are consistent with those previously outlined in other Native American education studies (Erickson & Mohatt, 1982; Foster, 1989; Phillips, 1983; Lipka, 1991; Scollon & Scollon, 1981). The facilitating teacher role promotes both autonomous and cooperative learning: students take greater responsibility for their own learning .

Collins, Brown, and Newman (1989) note that in constructivist classrooms the teacher coaches and scaffolds, observes the learner and offers hints and feedback to guide her/his thinking. This guidance includes encouraging the student to reflect on and talk about that thinking as well as compare it with the thinking of others. Constructivist classrooms are not dominated by textbook oriented "teacher talk", rather, they are environments of collaborative problem solving. Brooks and Brooks (1993) caution against teacher and text domination:

Conscientious students who are acculturated to receiving information passively and awaiting directions before acting will study and memorize what their teachers tell them is important. Robbing students of the opportunity to discern for themselves importance from trivia can evoke the conditions of a well-managed classroom at the expense of a transformation-seeking classroom (p. 103).

Principle 2 Sense-making Instruction and Principle 3 Problem-based Instruction with the Problems Situated in the Culture and Lived Experiences of the Learner

In a case study of a Yup'ik teacher, Lipka (1991) proposes that Eskimo teachers should teach Eskimo students. He states that ethnicity is not merely a classroom variable but that it determines the actual interactional style and relationship between students and teachers. He argues that for teachers to effectively instruct, they must possess not only an in-depth understanding of content in the culture, but that they must also share culturally compatible communication styles and values. Lipka grounds his proposal on cognitive learning theory:

Research on minority and indigenous school-aged students reveals a "relational" cognitive style. . . . (This) style recognizes the importance of the

whole and the context, as opposed to an "analytical" cognitive style, which is abstract and decontextualized (Cohen, 1969). . . . The non-Yup'ik teacher states in a linear manner, first this, and then this (Good & Brophy, 1987), prior to doing anything. The verbal messages are decontextualized from the content. . . . Differences in ordering of introductory statements between Anglo and Yup'ik teachers are not mere happenstance; they are culturally grounded in Yup'ik and mainstream American culture. Activities (in indigenous classrooms) begin without the customary lengthy verbal introduction Anglos expect. This suggests differences in cognitive ordering and structuring.

Lipka illuminates the intentionality of Native American instruction by explaining specific practices. For example, Native American teachers will ignore requests for procedural or locational assistance so as not to reinforce dependence on verbal instruction during lessons that call for observation. Students are also allowed to move from their seats to get a closer look at what other students might be doing. In these ways, the teacher shares the instructional load with the students and builds group solidarity.

Another Native American teaching practice is the avoidance of correcting someone or directly telling them that they are wrong. In Yup'ik pedagogy, corrections are based on affirmations of what the student knows. Underlying this practice is the belief that each student is capable of learning when allowed to perform in his/her comfort zone.

In the Yup'ik classroom of this case study, Lipka described instruction as relaxed, almost informal, and reminiscent of lessons taught by elders. The teacher involved the students with content exploration by situating it pedagogically within the lived experiences of the students. Among the examples of situated pedagogy described by Lipka is an incident when the teacher invited the students to sit on the floor with him, some chose to and some chose not to do so. There was no coaxing or statements of persuasion. From a Yup'ik cultural perspective, what was done respected the individual and reinforced group harmony.

Likewise, the lesson content, an art lesson in which the problem to be solved was that of simulating the stretching of a beaver skin, was situated within the Yup'ik culture and required special understanding by the teacher, understanding that perceived the lesson as an art activity as well as a lesson about survival, patience, care, and doing things properly. To summarize, for instruction to be culturally sensitive, content and pedagogy cannot be separated. Other researchers reporting similar findings include Gilliland (1992), Macias (1989), Ross (1989), and Swisher and Dehyle (1989).

Constructivism also emphasizes situated and contextualized learning. In constructivist classrooms, students carry out tasks and solve problems that resemble the nature of those tasks in the real world (Glatthorn, 1994). Rather than doing exercises out of context, the student becomes engaged with contextualized problems, problems that

allow the learner to connect prior knowledge and transfer new knowledge and understanding to real situations.

Principle 4 Cooperative Rather than Competitive Instruction: Cooperative Self-determination

Phillips (1983) in her book, **The Invisible Culture**, provides a detailed description of how classroom communication patterns of Indian children parallel adult communication patterns on the Warm Springs Indian Reservation in Oregon. Thought provoking findings of this study include:

Indian students generally make less effort than Anglo students to get the floor in classroom interaction. They compete with one another less for the teacher's attention, and make less use of the classroom interactional framework to demonstrate academic achievement (p. 108).

It is generally the case that turns at talk are more evenly distributed in Indian classrooms (p. 113).

In the Indian classroom it is common for children who had demonstrated the ability to answer correctly a particular question in one instance to refrain from even trying to answer the same question the next time it was raised (p. 113).

The children are reared in an environment that discourages drawing attention to oneself by acting as though one is better than another (p. 118).

Indian student verbal participation in group projects was not only much greater than in whole class or small-group (teacher directed) encounters, but also qualitatively different. As a rule, one could not determine who had been appointed as leaders of the Indian groups on the basis of the organization of interaction, and when the students were asked to pick a leader, they usually ignored the instructions and got on to the task at hand (p. 120).

Indian children demonstrate a strong preference for team games and races . . . but they show a reluctance to function as leaders in games that require one person to control the activities of others (p. 122).

In group projects and playground activities, Indian students were able to sustain infrastructure interactions involving more students for a longer time (compared to white students in the same study) without the interaction breaking down because of conflict or too many people trying to control the talk (p. 124).

In her study, Phillips proposes that the non-competitive, cooperative nature of Indian children is behavior which mirrors adult communication patterns. She hypothesizes that Indian organization of interaction can be characterized as maximizing the control that an individual has over his or her own talk, and as minimizing the control that a given individual has over others. Furthermore, she explains that Indians are not accustomed to having to appeal to a single individual for permission to speak but rather determining for themselves whether they will speak. Behavior which might be judged by Anglos to be reticent and insecure would be considered by Indians as self-determining.

Many studies of North American Indians have noted that overt authority which would interfere with the autonomy of the individual is rarely or never exercised (Basso, 1970; Hallowell, 1955; Erickson & Mohatt, 1982; Spindler & Spindler, 1971). It is not that Indians are by nature self-effacing, rather, Phillips suggests that this behavior is consequential to the caretaking patterns of extended families. A child cared for by siblings and cousins is less likely to compete for the attention of a dominant adult and is more likely to attend to the rhythms of group interaction while maintaining a healthy degree of independence. "The notion of a single individual being structurally set apart from all others, in anything other than an observer role, and yet still a part of the group organization, is one that Indian children probably encounter for the first time in school (Phillips, 1982)."

Like the social interactional patterns described by Phillips above, the foundational principles on which constructivism is grounded emphasize social and cultural mediation of learning. Brooks and Brooks (1993) succinctly express this:

Constructivism is not a theory about teaching. It's a theory about knowledge and learning. Drawing on a synthesis of current work in cognitive psychology, philosophy, and anthropology, the theory defines knowledge as temporary, developmental, socially and culturally mediated, and thus, non-objective. Learning from this perspective is understood to be a self-regulated process of resolving inner cognitive conflicts that often become apparent through concrete experiences, collaborative discourse, and reflection (p.vii).

The cooperative learning behaviors described above by Phillips provide rich examples of social mediation and must be regarded with awesome respect. Such behaviors exemplify not only human ways of learning but humane ways of surviving.

Principle 5 Time-Generous Rather than Time-Driven Instruction

Erickson and Mohatt (1982) investigated the interaction patterns of two experienced first grade teachers, one Indian and one Anglo, in Odawa and Ojibwa classrooms in northern Ontario. A significant contribution of this study was the comparison of time

allocation for instructional activities between the classrooms. The study documented that the Indian teacher spent more time waiting for students to finish their work - students were given 15 minutes to finish work in the Indian classroom and an average of 5 minutes in the Anglo classroom, that the Indian teacher appeared to accommodate more sensitively to the children's rates of beginning, doing and finishing work, and that she maintained control of the students not with overt directives but by paying close attention to the rhythms of activity and judging when the students were ready for things to change.

The researchers explained this behavior as reflecting sensitivity to culturally valued collaborative behavior, rather than to authoritarianism. The Indian teacher's strategies involved proceeding fairly slowly and deliberately, sharing the social control: leadership shared by teacher and by students rather than divided into separate compartments - teacher time and student time. The teacher had control of the students but achieved this by paying close attention to each student's progress. In this way, the students clearly had control of the teacher. A predetermined schedule or curriculum agenda directed by the teacher did not set the pace for instruction.

Lipka (1991) reported similar findings in the study described above. He explained that Indian students have a different set of "rights and responsibilities" than we would find in a mainstream classroom. They begin and finish a task at their own pace, within the confines of school. The teacher does not say, "Okay, it's three o'clock and it's time to leave, everybody hand in your work." The task and the involvement of the children with the task determined time. Gilliland (1992), in his book **Teaching the Native American**, explains:

The Native American characteristic which is probably most misunderstood is their concept of time. To European-Americans, time is very important. It must be used to the fullest. Hurry is the by-word. Get things done. They feel guilty if they are idle. They say, "Time flies." To the Mexican, "time walks." However, the Indian tells me, "Time is with us." Life should be easy going, with little pressure. There is no need to watch clocks. In fact, many Indian languages have no word for time. Things should be done when they need to be done. Exactness of time is of little importance. When an activity should be done is better determined by when the thing that precedes it is completed or when circumstances are right than by what the clock says (pp. 32-33).

The constructivist process, like the Native American instruction described above, must not be constrained by rigid time-driven and grade specific mastery of objectives. Constructivism views time as a way of coming to know one's world (Brooks & Brooks, 1993), and coming to know one's world is a lifelong process; one's individual experiences generate understanding and the development of new knowledge; rich experiencing takes time.

Reflections on the Dominant Culture and Constructivism

Culture is a system of standards for perceiving, believing, evaluating, and acting (Goodenough, 1971).

People in interaction are environments for each other (McDermott, 1976).

Integration of these two quotes help summarize the premise of this paper: culturally responsive pedagogy can only be practiced in culturally sensitive environments where ways of perceiving, believing, acting, and evaluating are shared. After considering this premise and having reflected on the studies reported in this paper, one is inclined to conclude that Native American pedagogy and constructivism share common beliefs and perceptions about teaching and learning. Therefore, it is possible to propose that constructivist ways of teaching promise to be culturally responsive to cultures valuing Native American pedagogy as described in this paper. Furthermore, it is possible to conclude that both conflict with traditional dominant culture pedagogic beliefs. The following table serves to validate this statement by comparing and contrasting these three perspectives:

A Comparison of Principles Across Instructional Approaches

Dominant Culture Pedagogy	Constructivist Pedagogy	Native American Pedagogy
Teachers generally behave in a didactic manner, disseminating information to students.	Teachers generally behave in an interactive manner, mediating the environment for the student.	Teachers engage students with content through group involvement, decentralizing teacher intervention and authoritarianism.
Students primarily work alone.	Students primarily work in groups.	Caretaking patterns of extended families and bonded community interactions are replicated in group learning experiences.
Curriculum activities rely heavily on textbooks and workbooks.	Curricular activities rely heavily on primary sources of data and manipulative materials.	Lessons relate to real problems that will likely confront the student.
The day is partitioned into blocks of time and content coverage. "Time on task" drives instruction.	Class time is spent solving complex problems. Students are encouraged to reflect on and discuss their own and other's thinking.	Instruction is time-generous rather than time-driven. Exactness of time is of little importance; when an activity should be done is determined by when the activity that proceeds it is completed.
Curriculum is presented part to whole with emphasis on basic skills.	Curriculum is presented whole to parts with emphasis on big concepts.	All knowledge is relational, presented whole-to-part not part-to-whole. Just as the circle produces harmony, holistic thinking promotes sense-making

Students are viewed as blank slates onto which information is etched by the teacher.	Students are viewed as thinkers with emerging theories about the world.	Each student possess Creator-given strengths and is born a thinker with a life mission.
Student assessment is viewed as separate from teaching and occurs almost entirely through testing, testing that stratifies students and promotes competition.	Assessment is interwoven with teaching and occurs through teacher observation of student work. Each student is instructed at her/his appropriate learning level. There is little, if any, use for competition.	Age and ability determine task appropriateness. Task and learning mastery is demonstrated through performance. Creator ordained mission determines one's role in life, and no one mission is better than another. Competition, situating one as better than another is discouraged.

The proposition that culturally responsive pedagogy can only be practiced in culturally sensitive environments leads one to consider the culture that generated constructivist principles. As stated earlier, constructivism is founded on theories of cognitive psychology, philosophy, and anthropology. However, theories do not generate cultural environments; rather, cultures generate and support theories. The question that must be posed is, Why were constructivist ideas developed by educators within the dominant culture, and why is constructivism generating dominant culture interest? A quote from the **National Council for Teachers of Mathematics Teaching Standards** (1991) attributes this instructional reform to concern over projected societal needs of the twenty-first century. Reflection on this excerpt also illuminates why the American society is economically stratified as well as why Indian children have experienced and continue to experience failure in traditional dominant culture schools.

Schools, as now organized, are a product of the industrial age. In most democratic countries, common schools were created to provide most youth the training needed to become workers in fields, factories, and shops. As a result of such schooling, students also were expected to become literate enough to be informed voters. Thus, minimum competencies in reading and writing, and arithmetic were expected of all students, and more advanced academic training was reserved for the select few. These more advanced students attended the schools that were expected to educate the future cultural, academic, business, and government leaders.

The educational system of the industrial age does not meet the economic needs of today. New social goals for education include (1) mathematically literate workers, (2) lifelong learning, (3) opportunity for all, and (4) an informed electorate. Implicit in these goals is a school system organized to serve as an important resource for all citizens throughout their lives (**NCTM Standards**, 1989, p. 3).

Caution is imperative when considering these statements. Emphasis must be placed on the words "economic needs", not "opportunity for all". Global market economy drives this reform, not humanitarian concerns; however, whether driven by economy or humanity, the shift from didactic classrooms to constructivist classrooms is real. Educators have recognized and are recognizing that industrial age factory model schooling no longer serves a nation at risk of losing marketing capabilities and societal harmony. A most thought provoking consideration is that what produced for Indian people a community building educational process based on situated problem solving is now forcing the dominant culture to return to human and humane ways of learning, ways identified as constructivism. The traditional dominant culture educational system evolved out of industrial demands, whereas, constructivism reponds to the human condition.

Conclusion

At the beginning of this paper, it was proposed that attention be given not only to what people learn but also how people learn (Phillips, 1983). In response to this concern, I have attempted to describe a Native American way of learning and discuss its compatibility with constructivism. The following comments, though motivated by very different lived experiences, reflect this compatibility:

Brooks and Brooks (1993) describe the characteristics of constructivist classrooms as environments in which teachers recognize and honor the human impulse to construct understanding. They explain that teachers in these environments:

- * free students from the dreariness of fact-driven curriculums and allow them to focus on large ideas;
- *place in students' hands the exhilarating power to follow trails of interest, to make connections, to reformulate ideas, and to reach unique conclusions;
- *Share with students the important message that the world is a complex place in which multiple perspectives exist and truth is often a matter of interpretation;
- *acknowledge that learning and the process of assessing learning, are, at best, elusive and messy endeavors that are not easily managed (p. 22).

An Oneida kindergarten teacher, one identified as a practitioner of Native American pedagogy, expressed similar beliefs when describing her role:

One of the things that is passed along through culture is the belief that what we do today is going to benefit or harm the next seven generations, and that is the Great Law. So we must be mindful of how we are treating the children. Every creation is special. Every child has strengths, and I think as a teacher you need to bring out those strengths. I don't know everything. We are a body of learners together, and they teach me things. I want them to feel that they are equal to me, that they can

ask me anything, that they can be participants in their own learning, that they can help decide what's going on in our classroom. You find out their strengths by getting to know what they want to learn about and facilitating what needs to be learned that way. In a way, that's a real good balance (Hankes, 1994).

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