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ABSTRACT

The objective of this study is to assess whether arts-based curriculum facilitates the acquisition of English as a Second Language without sacrificing proficiency in the first language (in this case, Spanish). The paper has two chief parts, one theoretical, the other empirical. In the first part, similarities between authentic arts-based curriculum and Vygotskian theory are examined in five sections dealing with: (1) the authenticity of the art experience; (2) the emphasis on social interaction; (3) the developmental interplay among sign systems; (4) the role of play and imagination in development and learning; and (5) the effort to overcome the dualism inherent in the separation of object and subject. For each of these themes, related research is examined. The second part discusses a 1993 study involving two fifth-grade classes in an urban Chapter 1 school. One of these classes, with 33 pupils, used an arts based instructional model; the other, with 30 pupils, served as a comparison group. All students were involved in English-as-a-Second-Language learning and all came from low socioeconomic status (SES) backgrounds. Students in the first group attended the arts based classes twice a week for 5-6 hours weekly; of this group, 12 had been in the program in the previous year (1992). Scores on achievement batteries were treated as pre- and post-test data. Characteristics of the two classes were matched according to grade level, home language, native language ability, and SES level. Data was collected by means of on-site observations, audio-recordings, and teacher questionnaires and interviews. In general, findings support the use of the arts based approach for second language learners; however, several important questions emerged and much research remains to be done. Two teacher questionnaires and 10 tables comparing 1992 and 1993 English and reading scores are appended. (Contains 85 references.) (LR)

Worlds together . . . words apart:
An assessment of the effectiveness of arts-based
curriculum for second language learners

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OBJECTIVES:

The objective of this study is to assess whether arts-based curriculum facilitates the acquisition of English as a second language without sacrificing proficiency in the first language (Spanish). This question is examined theoretically and empirically. Theoretically, two perspectives are offered. First, the use of arts-based curriculum is positioned within a Vygotskian framework of learning and conceptually organized by themes. Second, applicable findings from related literature are examined within each of these themes. Empirically, results from an exploratory study are presented and analyzed.

INTRODUCTION:

Cultural diversity is one of our nation's greatest strengths. A 1986 study by Gollnick and Chin found 276 different ethnic groups in the United States, including 170 Native American groups (Wasson, Stuhr, & Petrovich-Mwaniki, 1990). In the New York City school system alone there are over 114 languages spoken (Brenner, 1991). In California, 52% of the students in 1992 were language minorities. This figure is expected to reach 70% by the turn of the century (Garcia, 1993). Therefore, issues surrounding the education of second language learners are of paramount importance as educators continue to search for ways to deal with our multilinguistic and multicultural society in the school system.

The current practices of our schools have negated this diversity by ascribing superiority to a hierarchical value system based on separation and competition (Bernstein, 1990; Lesko, 1988). Schooling is, in fact, experienced by minorities as a tool of the dominant group

to "maintain the inequality of the status quo" (Fernandez and Marengo, 1980; Suarez-Orozco, in Trueba, 1987). In linguistically heterogeneous classrooms, traditional competitive learning approaches may actually retard the academic progress of those students lacking "close to native-like" abilities in English (McGroarty, 1989; Spina, 1993; Trueba, 1989).

Even the research and methodology used to study second language learning are themselves situated within this historically elitist framework (Spina, 1993). Because the curriculum is structured to reward and reinforce analytical skills, it is often assumed that the failure of the schools to educate is a failure on the part of the students. For example, the majority of studies to date have compared bilinguals to monolinguals, using measures derived from and for monolingual samples, inherently assuming that monolingualism is the norm (Malokoff, 1988).

Likewise, compensatory programs have failed because they are inherently a deficit model (Pease-Alvarez & Hakuta, 1992). A deficit model assumes that variations from mainstream skills and values are deficit-producing aberrations which must be subject to compensatory interventions. Furthermore, the emphasis in bilingual educational theory and practice today is on content area subjects, particularly mathematics and science (Moll, 1992; Walberg, 1991), which are fields historically predominated by upper echelon white males (Walberg, 1991).

This paper proposes that authentic arts-based education may be critical in transcending limitations of language, culture, and/or experience that are not mainstream. Present imperatives to mainstream

these children demand that attention be paid to these issues.

Eminent educational philosophers of previous eras have felt similarly. Dewey (1934) and Langer (1942) located the cognitive power of the arts in their ability to express ideas that defy conventional language. Indeed, "art as experience" originated with Dewey and was the title of his seminal work in this area (1934). Dewey and Langer would agree with much of the material presented here, particularly the notion of art as process. By placing the arts as a central part of the educational process the notion of classroom discourse is expanded by extending language to include cultural and social mediation, offering a communication and evaluation milieu that is accessible to students who do not have proficiency in the predominant language.

A broader conception of communication follows the epistemology proposed by Saussure (1959), who defined language proficiency as the ability to communicate effectively in the tasks one carries out, not in terms of grammatical or phonemic correctness, which is measured against the practices of the dominant group (Bourdieu, 1991). As Cheng (in Trueba, 1987) writes, "Communication and communicative competence go beyond having a command of the forms of language (p. 49)." An authentic arts-based approach allows for this more global orientation.

A broader conception of cognition is also necessary to understand the impact of such an approach. Instrumental reasoning¹ is an explicit, sequential, linear progression of thought that follows

¹ The word "instrumental" is used here as an attempt to neutralize the oppositional and hierarchical attributes of "logical" or "rational" terminology, which imply, according to Derrida (1981) that "artistic" reasoning is illogical and irrational, which are considered negatives in this society.

consistent rules of logic (Ewert, 1991). Artistic reasoning, on the other hand, is often implicit and always based on conceptual connections. It stresses the holistic interpretation of perceptive knowledge in a reality that may be ambiguous and not even conscious. It allows for parallel processing of information and the creation of analogous forms in which to explore relationships (Ives & Pond, 1980).

As Perkins (1988, p. 118) explains:

"...through and through the arts engage our mechanisms of understanding...we encode, anticipate, project, ponder, conceive -- constructing and operating on and through webs of relationships." When we make works of art, we crystallize these webs into overt representations. "In other words, the appreciation and making of works of art inevitably and profoundly involve the application of our apparatus of understanding in various modes and directions."

While all students who have difficulty with written and oral language may find that artistic expression helps them clarify and organize thinking (Hoyt, 1992), it appears that the arts would especially benefit second language learners. This paper will examine the relationships among the cognitive, psychological, social and linguistic development of second language learners through the use of the arts as a medium of communication.

THEORETICAL FOUNDATIONS

Howard Gardner has said that "Schools and school systems which welcome the arts are a rare commodity on the contemporary American scene" (1988 p. 163). The educational system in this country has focused almost exclusively on the acquisition of instrumental knowledge (Ewert, 1991) as represented by mathematics and science. The privileged position of the rational "voice" of these disciplines

reflects a general tendency to dominate and silence other voices (Wertsch, in Moll, 1990). Thereby, schools offer students a one-sided representation of reality.

Although other theorists have speculated about the arts in education, only Vygotsky recognizes art as a method of cognition and places particular emphasis on the importance of communicative social interaction (scaffolding) that transcends language in the development of problem-solving skills (Vygotsky, 1971).

Vygotsky recognized both art and meaning as hybrid constructions. He defined learning as "the acquisition of many specialized abilities for thinking" (1978, p. 83, emphasis added). In The Psychology of Art, Vygotsky (1971) argued for psychology to include indirect evidence and circumstantial clues, not just direct "scientific" evidence, giving equal weight to "artistic," non-linear forms of thought. Instrumental and artistic thinking should be considered as equally important forms of intelligence, using different forms of semiotic mediation to actualize meaning, with development that is interdependent. By activating mediational activity, symbol systems may stimulate covert responses such as internal schematic connections, rehearsal, and comparison, extracting and processing information in coordinate ways resulting in a synthesized process.

"The over-riding concern evident in Vygotsky's intellectual work is the quest for synthesis" (van der Veer & Valsimer, 1991, p. 390). Synthesis is the substance and the strength of authentic arts-based curricula. Vygotsky gave prime importance to the synthesis of theory and praxis (what he called practical psychology). Practicality,

according to Vygotsky, is the supreme test of a theory. "It is practice which dictates how to build concepts and how to formulate laws" (Vygotsky, 1987, p. 389) Authentic arts-based curricula gives life to the postulates of theory.

There are many similarities between authentic arts-based curricula and Vygotskian theory that lie at the heart of this endeavor: 1. the authenticity of the art experience; 2. the emphasis on social interaction; 3. the developmental interplay among sign systems including the mediation of materials and audience and the appropriation of meanings. 4. the role of play and imagination/ fantasy in development and learning. 5. the effort to overcome the dualism in the separation of object and subject. Each in turn will be presented in the following paragraphs.

AUTHENTICITY

Authenticity is a Vygotskian concept applied to interactions when the content of the interaction is needed or important and when it motivates those involved to establish the social context for the transfer or application of knowledge and other resources (Moll & Greenberg, 1990). Authentic activity, in a school setting, must have all the characteristics of real activity created for real purposes in real contexts. That is, it must be holistic and meaningful.

Authentic arts-based curriculum encompasses the affective in the cognitive and emphasizes process, perception, and reflection. It goes beyond established once or twice weekly art classes that treat the arts as enrichment. It includes participation by the students in multicultural artistic endeavors that seek to promote intellectual

growth among diverse disciplines. It encompasses integrated content areas within the academic curriculum of education through the visual arts, literature, drama, music, and dance. The arts, in other words, are used as the main stimulus -- the primary vehicle -- for all learning.

The activities within authentic arts-based curricula simultaneously provide instruction in higher-order thinking and structured experience in second language learning without demanding the devaluation or assimilation of the first language. Because the arts offer a venue for cultural reinforcement, and because they are inherently social and cooperative, this position suggests that proficiency in the second language should be enhanced while maintaining a higher retention of native language ability. This would serve to accommodate multi-lingual (as well as multi-racial and multi-national) identity without forcing members of this group to choose one part of their identity and reject the rest².

Related research

An authentic arts-based approach places cognitive development and content, not English language instruction, as the primary object of instruction. This suggests that an authentic arts-based curriculum would facilitate second language acquisition without sacrificing higher-order cognitive development as, according to Wong Fillmore (1983, in Cummins, 1988) an emphasis on content area vocabulary and

² It is frequently assumed that art is multicultural because of the nature of its historical content and geographically diverse homage to past civilizations. Such an approach can become a token gesture unless cross-cultural investigations of art that are based in a socially constructed reality are emphasized. (Wasson et al 1990).

decontextualized structural skills would. General thinking skills and strategies or conceptual understanding of content area are not ignored or postponed until the student is English proficient.

Others have determined that literacy development for linguistically-different children involves a complex process of the multiple acquisition of language, cognition, and culture (Flores, Cousin, & Diaz, 1991; Moll, 1988). Many children in American schools belong to three or more sociocultural milieus which may or may not be in conflict. These include their peer group and its generationally-identified popular culture, their ethnic heritage, religious affiliation, and the dominant cultural-social ideology of the educational system (Wasson, Stuhr, & Petrovich-Mwaniki, 1990). All of these sociocultural milieus should be addressed through the curriculum in order to empower students. Erickson, in 1982, coined the term "culturally responsive pedagogy" to describe such a curriculum (Wasson, et. al., 1990). A culturally responsive approach implies recognition of, sensitivity to, and accommodation of the differences, including languages, inherent in such a population.

Ethnographic research illuminates the many problems of immigrant children in school deriving from the lack of cultural congruity between the students' home and school environments and the discontinuity between their sociocultural language use and the norms of the academic language (Au & Jordan, 1981, in Au & Kawakami, 1991; Cazden 1988; Heath, 1982; Mohatt & Erickson, 1981, in Trueba, 1985). As Vera John-Steiner (1985, p. 13) observed:

All children are born into a culturally patterned environment; the shared tasks of confronting them, such as learning to talk, to walk, and to attach meanings to their experiences, are reflected in their cognitive strategies. But their strategies are also an expression of the particular features of their culture. The changing systems of children's thoughts are variously shaped by the prevalent methods of physical and economic survival, by the language and visual symbols used by their people, and most importantly, by the ways in which care and instructions are ordered by their society.

For example, many immigrant children come from cultures where peer interactions are much more common than adult-child interaction patterns (Brent-Palmer, 1979, in, McLaughlin, 1985). Many cultural minority children use an inductive discourse style that emphasizes inferring fundamental assumptions from a series of statements, rather than the analytic style predominating in American middle class families (Cohen, 1969, Hasan, 1976, in McLaughlin, 1985) and used to deduce the truth of specific arguments from general propositions.

This may be particularly problematic in the traditional classroom where analytic mastery of a subject is "inextricably tied to instruments of assessment, presentation, and communication" (Gallas, 1991, p. 41). Each of these, including tests, textbooks, workbooks, charts, and the like, assumes that the children in a class share a commonality of experience and language that they most likely do not. Discrepancies between curricular materials and instructional methods used in the school and the tools and methods typically used in the child's culture have been shown to significantly diminish the child's classroom achievement (Au & Kawakami, 1984; Cazden, 1988; Garner, 1990). Thus, those outside of the mainstream can be prevented from participation in traditional settings (Cole & Griffin, 1987; Moll, 1990).

SOCIAL INTERACTION

Vygotskiiian theory stresses that development is inseparable from human social and cultural activities and that higher psychological processes have a cultural origin. Social interaction is the basis of individual learning, allowing students to test their abilities with the support of others before they use them on their own. Scaffolding is the term used for these interactional frameworks of learning. (The mediational aspects of scaffolding are discussed further in the section on developmental interplay.)

In the arts, borrowing, imitating, and sharing coding systems are the norm. The arts are profoundly social and mediational. Artists have perennially joined together in groups, borrowing from and building on each other's work. (These groups are even aptly called "schools.")

Perception of works of art requires an engagement in complex scaffolding interactions. The viewer or listener is actively involved in the experience. In addition to a possible pictorial reading (in a realistic, representational painting), for example, the perceiver must also comprehend other psychological (such as mood) and physical properties (such as temperature or sound) that are not visual. This position goes along with the view that problem-solving requires perception of wholes while being simultaneously aware of patterns, parts, and relationships as constituent features of the whole. This multiple-perspective interplay (mediation) appears to facilitate higher-order thought (Saxe, 1990).

Related research

Expression through the arts is highly salient. Therefore, the arts

offer opportunities for individuals and communities to create a strong sense of identity, and are essential for any group to assert a public presence (Schensul, 1990). This is consonant with Cummin's claim that empowerment through recognition of a community and its funds of knowledge beyond the classroom is a necessary condition for successful learning, particularly in second language education (Arias & Casanova, 1993).

Cummins' (1987) also maintains that the degree of contextual support available for expressing or determining meaning from a task as well as the degree of cognitive demands of a given task are central factors in second language acquisition. As Moll and Diaz (1987) have reported, children achieve greater comprehension when the instruction focuses on making meaning rather than the correctness of the utterance. This accords with the arguments for authenticity presented earlier.

However, Cummins (in Hakuta, 1986) and others do argue forcefully for the importance of distinguishing between contextual, communicative language and decontextual, more academic language. Contextualized language skill is the ability "to control the skills associated with face to face conversation, which requires one to monitor one's partner in order to respond effectively and which allows for little advance planning" (Snow, in Hakuta, 1986, p. 135). Decontextualized language skill is the ability "to provide a coherent, comprehensible, informationally adequate account without signals from an interlocutor" (Snow, in Hakuta, 1986, p. 135). It is to use language skills in the absence of context; to manipulate language metalinguistically in a manner associated with academic prowess.

Yet, these two modes of language may not be bipolar. It is conceivable that transfer between contextualized and decontextualized skills is hindered when a separation between the two is artificially created. The implication is that contextualized skills are internalized, schematized, and transferred to new contexts. One would expect, therefore, that if students are taught academic skills within the contextualized framework of an arts-based curriculum, the transfer from contextualized to decontextualized language would be facilitated. In this way, thinking would be interwoven with the environmental context in which it occurs (Kagan, 1990).

Cognitive research of preschool and primary school children provides trenchant illustrations of this. The language use of young children is highly contextualized and situation-specific. They typically convey their understanding of the world around them through play, movement, music, drama, and art. If the curriculum is outside of their experience, it will neither hold their interest nor facilitate their grasp of concepts (Trueba, 1989). An environment which supports second language acquisition through non-linguistic as well as verbal means is much more typical of learning outside of school (Resnick, 1987; Tharp & Gallimore, 1987).

DEVELOPMENTAL INTERPLAY AMONG SIGN SYSTEMS

The communication inherent in the arts serves as a crucial link in mediating meaning among all group members, regardless of language proficiency. Mediation occurs on multiple levels, including mediation between the learner and the other or between the learner and the materials (Presseisen & Kozulin, 1992). Bussis observes that

"Learning occurs when one creates a personal interpretation." This interpretation can take the form of a "feeling, an artistic expression, or a rush of language" as the individual makes a schematic connection to the new information. The important point is that the individual "personalizes the information and internalizes a connection between what is new and what is already known" (in Hoyt, 1992, p.584).

Art activities lead to contextual peer scaffolding encompassing a wide range of purposeful literacy skills and fostering growth in oral and written language. John-Steiner (1985) has said that the multiplicity of visual languages may also assist in the discovery of meaning through mediational scaffolding. This scaffolding includes the participants' "code switching" between two languages during the course of an activity (Thornburg, 1993). Recent research, counter to long-held beliefs, indicates that this integrative strategy may often enhance biliteracy development (Moll & Greenberg, 1990; Quintero & Huerta-Macias, 1992, Thornburg & Karp, 1992).

Related research

Although research on the arts and second language acquisition is limited, what is available confirms that comprehensibility of language can be dramatically increased with the addition of extra-linguistic information. (See Krashen, 1985, for further discussion.) Extra-linguistic factors affect how learners respond to the input to which they are exposed. For example, in 1981, Taylor (McGuire, 1984) found that instruction in musical rhythm enhanced listening skills and language awareness. Eastlund (1980, in McGuire, 1984) found that when language education was approached through the medium of music, its

"affective effects made learning and language acquisition easier" (p.838). Research by Klein & Schwarz (1977, in McGuire, 1984) and Jorgenson & Kinstch (1973) determined that auditory and visual sequential memory training and the coding of information as imagery plays an important part in the perceptual processes of reading and the comprehension of language.

Studies have shown that students who learn explicit mental operations or skills in the arts became better visualizers of transformations in space and better analyzers of complex displays (Salomon, in Olson, 1974). For example, students shown films, slides, or prints of enlarged details in paintings were subsequently found to be better able to attend to cues, more sensitive to complexities, and better able to absorb more information from a single display. Similar findings were found with students exposed to complex visual displays that "exploded," or spread out, the components in numerous ways.

An arts-based curriculum provides a more diversified approach and accommodates both first and second language and cultural skills, facilitating improved language and skill development. Language-dependent communication of ideas and feelings often leave second language learners frustrated over their inability to express themselves and have that expression understood (Izzo, 1981). The varied opportunities for language use and the development of these skills within another symbol system for communication (the arts) serves to alleviate anxiety in the language-dependent communicative sphere. Arts-based education teaches us

about our capacity to communicate ideas and feelings in a variety of modes and media (not just language); to analyze data through analogy and illustration; to accept compromise, ambiguity, and difference as positive human traits; and to construct ethical standards of judgment and action (Godfrey, 1992, p. 596).

Art also offers the opportunity for a child to translate her ideas into a kinetic modality. This may be particularly helpful to a child who is easily distracted or overly active (see Gallas, 1991). One could infer, then, that it would also be helpful to a child frustrated over communication difficulty due to language difficulties. Through art, one can express what one knows even if "that knowing cannot be expressed in words" (Goldberg, 1992, p. 620).

Recent research in cognition and perception demonstrates a positive correlation between arts instruction and academic achievement in reading and language skills which in turn enhance abilities in content areas (Broudy, 1987; Gardner, 1990; Perkins, 1987). Studies of English-speaking monolingual children have shown that significant reading gains resulted from arts-centered programs. For example, Lidstone (1979, in McGuire, 1984) found that readers from two to five years below grade level came up to grade level after five months in an arts-based school. This study also reported that sixth grade low socioeconomic level students who were at or above grade level in reading gained an additional 600% after their first year in an arts centered program.

Gardner (1990) and the staff at Harvard's Project Zero have determined that the visual arts and music are involved in the function

of symbol creation and usage, as is language development. Platt (1977, in McGuire, 1984, p.837) found that

There is a direct correspondence between the drawn symbol and the written symbol. Graphic images are part of a visual vocabulary which has intense personal meaning to the child. There is a symbiotic relationship among drawing, writing, reading, speaking, and listening.

Platt's study demonstrated how graphic images provide a "concrete foundation" for developing sound-image relationships in addition to aiding the abstract reading of symbols, increasing motivation, and enhancing vocabulary (McGuire, 1984). As Arnheim (1990) pointed out, visual media translate abstract ideas into visual ones and thereby give them sensory concreteness. All visual media have some aspect of spatial simultaneity. That is, they must be apprehended in groups of symbols rather than one by one. Likewise, in reading, not only is every letter perceived as a whole, but entire words and even phrases are grasped as units (Olson, 1974).

These and a number of other initiatives have supported the "functional significance of imagery in problem solving" (Ives & Pond, 1980, p. 337) and knowledge retention (Broudy, 1987). Many problems that can be solved linguistically, can also be solved through imagery (Jorgenson & Kinstch, 1973; Olson, 1975; Quinton & Fellows, 1975, in Ives & Pond, 1980). Information coded as artistic imagery has been shown to be easily accessible in memory (Jorgenson and Kinstch, 1973) and perceptual processes, including critical thinking and language comprehension, rely heavily on imagery in mentally formulating and testing hypotheses (Torrance, 1986).

The cognitive and linguistic research summarized here parallels the

neuropsychological theory of Hanna and Antonio Damasio. Analyzing data from brain-injured patients, the Damasios have proposed a comprehensive theory that challenges prevailing notions of knowledge perception and organization and the production of language. The predominant view of the brain is that of a hierarchically organized network of neurons that function from low-level sensory input screeners to higher levels that receive the distilled essence of an experience. In this view, the brain is seen as having specialized regions for storing integrated memories of individual objects.

The Damasios propose instead that perception is parcellated. Components of a precept are recorded in separate cortices of the brain and mediational neural ensembles combine the details needed to discriminate one object from another similar to it (1990). These mediational structures, or "convergence zones," store information that links the fragmented components. In the Damasio model, convergence zones would not, for example,

contain records of words themselves but rather records of the combination between the many records that subsume a concept nonverbally and the records that subsume acoustical patterns with which a given word can be reconstructed (Damasio & Damasio, 1990, p. 282).

In order to recall an image, convergence zones synchronously reactivate the various sensory fragments in different patterns to reconstruct the image. Activity between convergence zones is parallel, recursive, and distributed. Perceptions and actions are categorized by the brain along many different dimensions simultaneously, serving both understanding and expression. These zones are formed and rearranged throughout life.

Based on data from hundreds of brain lesion patients, the Damasios propose that sensory engagement, object distinction, and relevance govern the rules the brain follows.

A concept is represented in distributed form at both cellular and systems level...the representation is governed by the physical structure and operation of the entity, the history of its inter-action with the perceiver, and the inherited and acquired biases of the perceiver vis-a-vis the entity (Damasio, 1990, p. 294).

Convergence theory can help us understand language and provide an explanation for the effectiveness of authentic arts-based curriculum for enhancing language acquisition. According to Damasio, words get their meaning not from definitions, but by neural linkage of words to nonverbal images that supply the meaning. Damasio's research group has demonstrated that language depends on cerebral structures not traditionally considered language related (Damasio & Damasio, 1990; Damasio & Tranel, 1993).

Ursula Bellugi, working with the Damasios, has found that certain stroke patients who can recognize objects but are unable to name them are able to learn sign-language (Damasio, 1992). Furthermore, the use of sign-language often helped the patients recall the spoken names, as though the gestures had linked knowledge to language through alternate pathways. One could argue, on the basis of her data, that engagement in artistic activity should result in stronger, more diverse pathways to language links in normal populations by maximizing possible mediational outcomes between concepts and word forms.

Perhaps, because there is more ambiguity in a visual or artistic statement than a verbal statement, in the sense that a painting or

dance, for example, leaves us with more alternatives for meaning, it offers a wider choice of elements from which to extract information and provides us with more opportunity for inquiry and convergence.

Imagination may come to be defined in terms of neural mediation of meaning. It may no longer be seen as transcendental or peculiar to the arts or children's play. Creativity would be recognized as a necessary resource in all domains of learning.

The arts present a complex situation which must be decomposed and reencoded in order to process information (Salomon, in Olson, 1974). This may be similar to efforts at "translating" from the first to second language in early stages of L2 acquisition. This view is supported by the work of Lambert (1977, in Kozulin, 1988) and others (Arias & Casanova, 1993; Hakuta, in Padilla, Fairchild, & Valadez, 1990) showing that those proficient in both their first and second language have more cognitive flexibility than those who know one language much better than the other. Campbell (in Simonton, 1988, p. 391) explains this cognitive advantage in a way that reflects the tenets of "artistic" thinking:

Persons who have been uprooted from traditional cultures, or who have been thoroughly exposed to two or more cultures, seem to have the advantage in the range of hypotheses they are apt to consider, and through this means, in the frequency of creative innovation.

Salomon postulates (in Olson, 1974) that as the number of different coding systems increases, mental capacity increases. "With the acquisition of each coding system, one becomes able to think in a new way, while also being better able to handle more domains of information" (p. 405). Perhaps, in Damasio's terms, the increase in

coding systems results in an increase in networking of convergence zones.

ROLE OF PLAY AND IMAGINATION/FANTASY

Play and fantasy are particularly complex and rich types of mediation and so warrant their own category. In play, as in artistic involvement, one is liberated from situational constraints. For example, during play a block may be a spaceship, a telephone, or a sandwich. In transforming one thing to another, meaning is separated from the object (Vygotsky, 1962). This symbolic transformation in play provides practice in the use of signs -- wherein is found the basis of artistic thinking.

Scaffolding can also involve fantasy play -- the hallmark of early creativity and perspective taking. Vygotsky claimed that the (contextualized) fantasy in artistic thinking led children to think and use language symbolically, or on a decontextualized level (Ives & Pond, 1980). Dickinson (1994), Neuman and Roskos (1990), Thornburg (1993), and others have determined that creative engagement through play does have important implications for literacy development. Pretending highlights different ways of working with symbols and their referents (Dickinson, 1994) and thus promotes skills associated with metalinguistic competence. Vygotsky's perception of play is situated within his comprehensive theoretical construct of the sociocultural and mediational basis of cognition.

Related research

Ives and Pond (1980) report a series of studies that have found evidence for the cognitive benefits of fantasy (Fein, 1979; Golumb and

Cornelius, 1977; Yawkey, 1978; among others). All of these efforts found that fantasy, rather than actual experiences or verbal discussion, had a greater facilitating effect on such measures as I.Q. To explain these results, the authors refer to Vygotsky's claim that pretend play is "instrumental to creating internal systems of representation that help children to free themselves from the control of external stimulation and permit thinking about events and objects not immediately present" (Ives & Pond, 1980, p. 336).

Because the arts offer alternative ways for children to express themselves and explore their own inner language, the process of interpretation would be facilitated and strengthened, resulting in more effective transmediation. Transmediation, the process of moving information from one communication system to another (Harste, Burke, & Short, 1988, in Hoyt, 1992), encourages learners to process meaning in ways that deepen their understanding. Drama, for example, encourages higher order thinking, problem solving, and feeling as children use their voice and their bodies as ways of communicating. As they translate their knowledge into movement and sound, transmediation occurs (Hoyt, 1992).

BEYOND OBJECT AND SUBJECT

In Vygotsky's social context, there develops a growing awareness of the differences between self and other, and, consequently, to the varied perceptions of others of the self. The arts convey values, reveal perceptions, and provide cathartic experiences (Vygotsky, 1971). They can express something being explored or felt while embodying a process through which one learns about the subject and the self.

The power of this recognition of other leads to a freeing from egocentricity, resulting in increased accessibility of each categorical group to every other one -- both within the self and the other. Vygotsky addresses difference prosaically through the mediation of one's own experience with that of others. By allowing the learner to enter into the art rather than observing it as the "other", the possibility of indirect change is facilitated through the recognition of "others" experiences and the acknowledgment of the same need on the part of the individual. Other disciplines speak through the individual. In the arts, the self is mediated by the medium and the other's text. This serves not to eliminate conflict in the self but to reconcile the antagonisms of self/other to avoid domination as a response to conflict. Not discriminating among differences runs the risk of suppressing them

Related research

Ecker (1990) proffers that the arts, because they are multi-sensory, could help students to relate the diversity of values and beliefs found "within and beyond Western traditions" to their own lives. The arts teach respect for multiple perspectives, imagination, and interpretation; and that solutions to problems can take many forms (Eisner, 1992).

Psychological research (Hart & Goldin-Meadow, 1984) suggests that even children six years of age and younger understand that "other people often use different reasons from themselves to judge pictures ... that different people like different pictures for different reasons" (p. 157). Similarly, children seven years of age and older

understand that aesthetic criteria is pluralistic (Rosenstiel, Morrison, Silverman, & Gardner, 1978, in Hart, 1991). This development of empathy has been shown to promote general cognitive problem solving ability. In one study of 8 and 9 year old girls, for example, the extent to which the girls had these capacities was a powerful predictor of their performance on tests taken two years later (Kohn, 1991).

In addition, McLaughlin (1985) found that social influences "affect the child's attitude, motivation and behavior" and are perhaps even more important than personal and cognitive variables. According to the research findings he presents, this centers on the core issue of identity. Student experience is "intimately related to identity formation" (McLaren 1989 p.226) and is the core of emancipatory curriculum.

Language is also closely tied to personal identity (Snow, 1992). Although cognizant of the importance of second language mastery, the learner fears the loss of part of his "self." Yet the school must help the child adjust to and develop to her fullest potential in the larger, new society. Conducting communication in a second language can be an integrating force without becoming a forced assimilation by providing cultural reinforcement through the arts to compensate for that no longer reinforced through language. This allows the child to acclimate to her new culture without having to reject the old and lessens the trauma of changing one's language and thus one's mediational resource (Roy, 1989; Thornburg, 1990). Garcia (1993) states that an important sociocultural variable in second-language acquisition is the relationship between the cultures of the first and second language,

with the lesser social distance yielding a more positive effect on the learning of the second language. Similarly, positive regard for the culture associated with the language helps in second language acquisition (Snow 1992).

The creation of "art" develops the capacity to symbolize, which is linked to a number of egocentric functions (Wilson, 1985). At the level of individual development, the arts help one to "maintain the cognitive structure of the self" because "the creation of art is by definition an intentional and self-determined activity" (Csikszentmihalyi & Schiefele, 1992, p. 172). Getzels and Csikszentmihalyi (1976) have shown that the process of artistic expression helps one "gain some control and understanding of barely conscious internal tensions, diffuse problems, or felt ambiguities" (in Csikszentmihalyi & Schiefele, 1992, p. 170). This may compensate for the deficits in self-esteem that often accompany sociocultural change and the resulting actual or perceived failure to perform (Spindler & Spindler, 1987, in Trueba, 1989). The arts, by providing activities in which the minority child can fulfill expectations, exhibit competencies, and demonstrate self-efficacy, enable the child to experience success and retain self-esteem.

EMPIRICAL STUDY

SAMPLE:

The arts-based program involved in this study was founded in 1971 as a remedial reading program for monolingual English children. It has since been expanded to a K - 12 developmental and enrichment program for special education and bilingual students, designed to improve

reading and writing skills through the integration of a total arts-based approach with a total reading program that is teacher-directed. The instructional model uses a sociocultural framework which emphasizes the interplay between the social environment and higher order thinking and reflects the theoretical work of Lev Vygotsky (1978, 1987).

Students attend program classes twice a week for an average of five or six hours weekly. Nationally, the average weekly arts instruction in elementary schools is only about two hours and does not use the arts as a basis for content-area instruction (Eisner, 1992). Although five hours of arts-based reading instruction is considered inadequate by the definition of authentic arts-based curriculum, this researcher felt that if this program produced significant findings, it would lend support to the argument for a more comprehensive authentic arts-based program.

Two fifth grade classes from an urban area Chapter One school using this model participated in this study. Of the 33 students in the arts program, 12 had been in the program the previous year. All had attended the same school at least two years. All of the 30 students in the comparison group had also attended these schools at least one year prior to the study. The students included children from a range of racial and cultural backgrounds, with Spanish the predominant language. All were from low socioeconomic background. Classes chosen were dependent on program availability and the willingness of educators to cooperate in this study.

METHODOLOGY:

In the summer of 1992, initial contacts were made with urban area

school districts and cultural education programs to locate schools known to use an arts-based instructional approach and to have large populations of language different students. In early fall of 1992, these schools were contacted to see if they would participate in the project. A proposal was submitted to the City's Public Schools Board of Education and received approval in November, 1992. An ongoing arts-based program volunteered to participate.

Four teachers were involved in this study. The arts-based class had two program instructors and a homeroom teacher. The art program teachers held Master degrees in education. One spoke English and Spanish. The other spoke only English. The homeroom teacher held a bachelor degree in education and was enrolled in a master's program. She spoke Spanish, English, and Italian. The comparison group had one homeroom teacher. He spoke English and Spanish, had an M.S. in economics, and was the only male participating teacher. (This will be addressed later.)

The fifth grade homeroom teacher of the arts-based program participants was 24 years old and had been teaching one year. The other three teachers ranged from 39 to 56 years of age and had each been teaching elementary school 10 to 16 years.

Sixty-three Hispanic children were involved, with all of these learning English as a second language. All were receiving additional pull-out ESL instruction on a regular and equivalent basis. Most of the language different children were immigrants from Puerto Rico, The Dominican Republic, and Mexico.

School district officials were contacted to obtain demographic

characteristics of participating classes and scores of tests administered to the students in those classrooms for academic and language proficiency. Available scores on achievement batteries (LAB Spanish; LAB English; DRP Reading; ELE Spanish Reading) from 1991 through 1993 were treated as pre- and post-test data. The comparison class was matched to characteristics of the art-based class according to grade level, home language, native language ability, age, and socioeconomic level. These characteristics were determined from coded computerized data lists generated by the school district. Native language ability was determined on the basis of 1991 LAB Spanish scores. The normal curve equivalents of these scores averaged 42 for all fifth grade students, with the comparison group having a mean of 41 and the arts group having a mean of 43.

Five hours of on-site observations and audio recording were supplemented with teacher questionnaires and interviews for the purpose of descriptive data collection and verification of observations.

(Appendixes A and B).

RESULTS:

INSERT TABLES 1-A, 1-B, and 1-C HERE

Table 1 compares the differences in mean test scores of fifth grade students in the participant class (N=33) versus those in the comparison group (N=30). Levels of significance are given in the right column of the table. Since the test scores used were normal curve equivalents (NCE's), distributions are normal.

Significant differences were found between 1992 and 1993 English

and Reading scores of the overall and first year arts program participants. Differences between 1991 and 1992 scores were not significant. Among students enrolled in the arts program for the second year (N=12), the difference in scores is not significant, but it should be noted that the small sample size may have had a negative impact on the significance level. There were no significant ($p < .05$) differences in scores of the comparison group, who showed an overall gain of less than half as many points in Reading and one quarter as many in English as the art students over the two year period.

INSERT TABLES 2-A, 2-B, and 2-C HERE

A comparison between same year scores of arts-based and comparison groups (Table 2-A) shows significant ($p < .01$) differences in scores in all categories. Although the only test criteria used to match classes were 1991 NCE Spanish LAB scores and these were, as reported earlier, very similar, the 1991 English and Reading scores of the comparison group were all significantly lower than the arts group. The lower pre-test scores of the comparison group may be a factor in the net results of score differences, although comparing the differences within each group themselves (Tables 1-A, 1-B, 1-C), and not the actual scores across groups, should minimize this.

There is a greater occurrence of significant differences ($p < .001$) between the scores of the first year art students and the comparison group (Table 2-B) than the second year art students and the comparison group (Table 2-C). Significance levels for the second year group are

higher for differences between English 1991 and 1993 scores ($p < .001$) than reading, which is not significant until 1993 ($p < .05$). Again, the small sample size of the second year art group may have effected significance levels.

INSERT TABLES 3-A, 3-B, 3-C and 3-D HERE

Significant gains in Spanish reading scores (Table 3-A) were obtained by students in the arts-based program for whom those scores were available ($N=21$). Scores of the comparison group members taking the test both years ($N=24$) remained virtually unchanged, with a difference of less than half a point. The art group scores were also more homogeneous, as evidenced by less variability in the standard deviation. While significant differences were not found in the scores of the comparison group and the first year art students (Table 3-B), the differences themselves are of interest. The first year art students began the year with scores slightly lower (1.13) than the comparison group yet showed a gain of 378% (4.27). Net gains for the second-year arts students were approximately twice (193%) that of the comparison group (Table 3-C). The small sample size of this group ($N=7$) may have effected the outcome here. Also, it should be noted that the scores of the second-year art students, as a group, were initially significantly (9 points) higher than the comparison scores and may have been a factor in the findings.

Overall (Table 3-D), the scores of the arts group increased significantly over the comparison group scores, gaining almost four

times (375%) as many points. The pre-test scores for both groups were not significantly different, Although the control group was more homogeneous (with a standard deviation of 17) than the arts group (with a standard deviation of 25) in 1992, there was less variability in the scores of both groups in 1993.

DISCUSSION

This study demonstrates a strong relationship between arts-based instruction and ability in English and Spanish. To help explain these findings, a description of classroom observations is proffered.

The observed fifth grade arts class alternated instruction in thematic arts-based and reading-based activities. There was a separate room for each type of instruction. The observed arts segments featured spatial perceptions in works of art as part of a unit during which students were designing and creating murals. Exercises involved identifying horizon lines and the use of overlapping and grouping of figures. A wide variety of art styles was represented including ancient Greek, Mayan, Impressionist and Cubist, among others. The students worked independently or in pairs during the observed segments, but the murals and other projects were created cooperatively in groups. The theme for both the arts and reading segments of these classes was the culture (art, folktales, customs, etc.) of Central America and Mexico. The art segment was presently emphasizing the work of Diego Rivera. A unit about Frida Kahlo had recently been completed. Instruction was in English. Students spoke to each other in a combination of Spanish and English during the class. Student discussion was on-topic. They helped each other by scaffolding, not

correcting, answers. The homeroom teacher was present and would sometimes walk around the room and converse with students in Spanish. Usually she sat at a corner desk and did paper work, such as grading tests.

Both art program teachers moved around their classrooms and spoke to students individually in English. The art segment teacher's conversation with students was instructional and praised students on a one-to-one basis while in the first reading segment that was observed, teacher interaction with students on a one-to-one level was primarily to correct behavior. Instructional conversation with students addressed or questioned the entire class as a group. Individual students were called on by name and correct answers were positively reinforced. Incorrect responses were addressed by reformulating questions and scaffolding.

The reading segments featured the tale of Quetzalcoatl, an Aztec god, with an emphasis on vocabulary and comprehension, problems and solutions in the story, and journal type self-reflective writing. The instructor discussed vocabulary and then read the story, asking for student participation in terms of vocabulary, prediction, and recall. The lesson was conducted in English only. Students did speak to each other in both Spanish and English. Most of the student talk in one class was among one group of three boys and was off-topic.

The fifth grade comparison group was observed in language arts and mathematics segments. The teacher taught in a combination of both Spanish and English. There was almost no conversation among students. The language arts lesson involved finding the main idea in reading

selections. Instructions were written in Spanish on large pieces of paper and hung in front of the room so students could refer to them. Spoken instruction was in Spanish and English, with English predominating. The teacher's instructional style during this lesson was more subdued than during the mathematics segment. Since he had been an economics instructor at the university level prior to coming to this country, it may be that this reflected his enthusiasm for or expertise in the subject of mathematics.

The observed mathematics segment was almost entirely in Spanish. The teacher pointed out that most classes are far more bilingual and use much more English, but the mathematics periods were being taught in Spanish at this time because the upcoming standardized mathematics exam the students will take is in Spanish. Key words (such as difference or multiply) were repeated in English after they were said in Spanish. Students would be called on by the teacher to read aloud word problems from their Spanish-language workbook. As they read, the teacher wrote the number facts on the board. He was animated and enthusiastic during the mathematics lesson, moving around the room, nominating students by name, and providing liberal positive reinforcement. Students who struggled were prompted (in Spanish) to look for the "clue word" in the problem in order to find "what method." While the teacher did use and model scaffolding behavior, the students corrected their peers' errors, usually by calling out correct answers in unison, until the teacher quieted them. The entire class functioned as a group.

The arts-based teachers and the comparison group's teacher all exhibited caring gestures, such as occasionally walking over to a

student and placing a hand on their shoulder. The physical touching and proximity was culturally appropriate in the Hispanic classes. All of the teachers were very concerned that students learn the concepts and understand the process in addition to being able to arrive at the correct answer or "perform." All classroom environments were similar in facilities and decor. Seating was arranged in groups.

In both arts-based segments, almost all (85% to 90%) of the students appeared to be on-task during the lesson. In the reading segment of the arts program and the comparison mathematics class, 60% to 70% were observed to be on-task at a given time. It may be that the more "hands-on" involvement offered in art held the students' interest more, but time on-task itself may be a factor in the outcomes of this study and should be considered in future research and analysis.

Students who were off-task in one arts-based reading segment were disruptive while those in the other groups were not. Off-task behavior in this reading group included playing with things (such as trinkets and key chains) among pairs or groups of students, telling jokes, and making comments that were greeted with giggles and more comments. Off-task behavior in the comparison group was quieter and included daydreaming, doodling, toying with pencils, and the like. One could speculate a number of reasons for this. It may be that the comparison teacher was either more feared or respected because he was male and/or Hispanic. It may have been easier for his students to focus on the lesson because far more Spanish than English was used. Or, the maturity level of the students may need to be considered.

It should be noted that, although Spanish predominated in the

observed lessons of the comparison group, and English predominated in the arts-based group, the overall exposure to both languages for all children was approximately the same on a weekly basis. This was determined through interviewing the assistant principal and homeroom and ESL teachers.

One of the issues not examined in this study was whether the students receiving the arts-based instruction perceived it as special treatment and showed improvement merely as a result of such perception (the Hawthorne effect). This is a question that would require further analysis. Additional possible confounding variables such as personality, "intelligence," environmental and social context, family, motivation, attitude, nutrition, and cognitive style would also seem important areas for future consideration.

This study provided no evidence that there is more social, hands-on, cooperative learning in the arts-based group than the comparison group, as revealed in observations, teacher interviews and lesson plans. However, it would seem appropriate to further explore the possibility that significant gains in English proficiency by students receiving the arts-based instruction is a result of the nature of the pedagogical model itself, as opposed to a reflection of the communicative and psychological qualities inherent in the arts. Although the arts have been shown to serve a dual role in second language learning, addressing and integrating both the affective and cognitive, it remains to be determined whether or not programs that are pedagogically similar to the arts-based models discussed, but are not themselves arts-based, would be equally effective.

Similarly, since the arts-based program that participated in this study was specifically designed to improve reading skills, future empirical work is also needed to assess the effects of arts-based curriculum on skills in other content areas.

Finally, because the student population involved in this study was exclusively Hispanic, it would be important to determine if arts-based approaches are equally effective for ESL students of other cultural and linguistic backgrounds, and to explore the implications for other at-risk populations that have context-specific impairments in the predominant language.

CONCLUSION:

Hakuta, Ferdman, and Diaz (1986) argue that the problems confronting cognitive development and second language education can only be solved "through a multilayered analysis that considers historical, linguistic, cognitive, socio-psychological, and sociological perspectives" (Arias & Casanova, 1993, p. 30). This study suggests that researchers may find such solutions in a similarly multilayered realm that encompasses all of these perspectives -- the realm of the arts.

Trueba (1987) writes that learning is stimulated through the functions of complex representational, constructive, directive, and evocative cultural meaning systems. He claims that through these functions minority students are "empowered" to perform competently in school. The literature that supports this, Trueba adds, is "quite convincing," but what is now needed are theories that "open the door to our understanding of how children can increase their knowledge" (p.11).

This paper has attempted to search for a key to open that door. It has examined artistic meaning systems and provided theoretical and empirical evidence that supports the use of such curricular approaches for second language learners. The findings are promising and provocative. However, much research remains to be done in order to further clarify the issues surrounding the arts and second language learning.

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APPENDIX A

Worlds Together...Words Apart
Teacher Questionnaire (A)

Note: All information is confidential and anonymity is guaranteed.

Your Name _____

School _____ Grade/class _____

Number of students _____

Are you the classroom teacher arts program teacher remedial teacher

other (please specify) _____

How many years have you been teaching in this capacity? _____

How many years have you been teaching overall? _____

What is your age? _____ Ethnic background? _____

Are you male or female?

Level of education (Highest degree) _____

What language(s) do you speak? _____

What language(s) do you use in the classroom? _____

What languages are spoken by the students in your class?

If you have an assistant, or work with another teacher in the classroom, what duties does s/he perform? _____

Are additional ESL services provided in your school? _____

If yes, please describe nature of services (pull-out, in class, times per week, etc.) _____

Worlds together ... Words apart
ARTS-BASED PROGRAM TEACHER
Supplementary Questionnaire (B)

If you are the arts-based approach teacher, please fill this out in addition to "Teacher Questionnaire A," even if you are also the primary classroom teacher.

Your name _____

School _____ Grade/class _____

Number of students _____ Program _____

How frequently are the participating students involved in arts based activity? (daily, weekly, etc.?)

_____ And for how long? _____

Please check ALL that apply:

TYPES OF ART ACTIVITIES USED IN PROGRAM throughout the year:

VISUAL ARTS

- Appreciation
 Drawing
 Painting
 Sculpture
 Printmaking
 Photography
 Fabric Art
 Pottery
 Film/video
 Other _____

MUSIC AND DANCE

- Appreciation Warm-up
 Rhythm Movement
 Pitch Modern
 Harmony Folk
 Voice (singing) Tap
 Notation Ballet
 Theory Jazz
 Classical Freestyle
 Dalcroze Orf
 Other _____

DRAMA

- Improvisation
 Role-playing
 Plays (acting)
 Puppetry
 Other _____

LITERATURE

- Poetry Folktales
 Classic Novels
 Writing Reading
 Styles/genres Contemporary
 Other _____

APPENDIX B

CONTENT AREAS Please check content areas into which art activities are incorporated and specify the relevant art forms for each content area.

SUBJECT	RELEVANT ART FORMS
<input type="checkbox"/> Reading	_____
<input type="checkbox"/> Social studies	_____
<input type="checkbox"/> Physical Education	_____
<input type="checkbox"/> Health studies	_____
<input type="checkbox"/> Mathematics	_____
<input type="checkbox"/> Science	_____
<input type="checkbox"/> ESL	_____
<input type="checkbox"/> Foreign language	_____
<input type="checkbox"/> Language arts	_____
<input type="checkbox"/> Other (please specify)	_____

CONTENT AREAS Please check content areas taught without reference to or use of art.

<input type="checkbox"/> Reading	<input type="checkbox"/> Language arts	<input type="checkbox"/> Social studies
<input type="checkbox"/> Health studies	<input type="checkbox"/> Mathematics	<input type="checkbox"/> Physical Education
<input type="checkbox"/> Science	<input type="checkbox"/> ESL	<input type="checkbox"/> Foreign language
<input type="checkbox"/> Other (please specify) _____		

If there is any other information you would like to add, or observations you'd like to share, please feel free to do so in the space below. Thank you.

**TABLE 1 - A : 5th Grade NCE English & Reading Scores
1992 - 93 Comparisons**

		ENGLISH '93	ENGLISH '92	DIFFERENCE	SIGNIFICANCE
TOTAL ARTS PROGRAM (N=33)	M SD	35.8750 (16.41662)	29.26087 (11.74431)	+ 6.61413	p<.01
1st YR ARTS PROGRAM (N=21)	M SD	39.35714 (18.13881)	33.07692 (11.78602)	+ 6.18022	p<.01
2nd YR ARTS PROGRAM (N=12)	M SD	31.00000 (12.97005)	24.30000 (10.17677)	+ 6.70000	n.s.
CONTROL GROUP NO ARTS (N=30)	M SD	15.03333 (11.90040)	17.74074 (16.92652)	- 2.70744	n.s.
		READING '93	READING '92	DIFFERENCE	SIGNIFICANCE
TOTAL ARTS PROGRAM (N=33)	M SD	35.34375 (21.30214)	22.77419 (11.94909)	+ 12.57226	p<.01
1st YR ARTS PROGRAM (N=21)	M SD	39.90476 (10.63489)	25.90000 (10.76984)	+ 14.00476	p<.01
2nd YR ARTS PROGRAM (N=12)	M SD	26.63636 (17.86769)	17.09091 (12.36491)	+ 9.54545	n.s.
CONTROL GROUP NO ARTS (N=30)	M SD	15.33333 (11.90040)	15.45833 (6.87136)	- 0.12503	n.s.

**TABLE 1 - B : 5th Grade NCE English & Reading Scores
1991 - 92 Comparisons**

		ENGLISH '92	ENGLISH '91	DIFFERENCE	SIGNIFICANCE
TOTAL ARTS PROGRAM (N=33)	M SD	29.26087 (11.74431)	24.67857 (10.82539)	+ 4.58235	n.s.
1st YR ARTS PROGRAM (N=21)	M SD	33.07692 (11.78602)	27.30769 (8.08687)	+ 5.76923	n.s.
2nd YR ARTS PROGRAM (N=12)	M SD	24.30000 (10.17677)	21.87500 (5.30330)	+ 2.42500	n.s.
CONTROL GROUP NO ARTS (N=30)	M SD	17.74074 (16.92652)	12.83333 (6.64433)	+ 4.90741	n.s.
		READING '92	READING '91	DIFFERENCE	SIGNIFICANCE
TOTAL ARTS PROGRAM (N=33)	M SD	22.77419 (11.94909)	24.78570 (10.82539)	- 2.01151	n.s.
'93 = 1st YR ARTS PROGRAM (N=21)	M SD	25.90000 (10.76984)	26.77778 (11.01099)	- .87780	n.s.
'93 = 2nd YR ARTS PROGRAM (N=12)	M SD	17.09091 (12.36491)	15.90000 (9.89332)	+ 1.19091	n.s.
CONTROL GROUP NO ARTS (N=30)	M SD	15.45833 (6.87136)	11.16667 (6.89016)	+ 4.29166	n.s.

**TABLE 1 - C : 5th Grade NCE English & Reading Scores
1991 - 93 Two Year Comparisons**

		ENGLISH '93	ENGLISH '91	DIFFERENCE	SIGNIFICANCE
TOTAL ARTS PROGRAM (N=33)	M SD	35.8750 (16.41662)	24.67857 (10.82539)	+ 11.19643	p<.05
1st YR ARTS PROGRAM (N=21)	M SD	39.35714 (18.13881)	27.30769 (8.08687)	+ 12.04945	p<.05
2nd YR ARTS PROGRAM (N=12)	M SD	31.00000 (12.97005)	21.87500 (5.30330)	+ 9.12500	n.s.
CONTROL GROUP NO ARTS (N=30)	M SD	15.03333 (11.90040)	12.83333 (6.64433)	+ 2.20000	n.s.
		READING '93	READING '91	DIFFERENCE	SIGNIFICANCE
TOTAL ARTS PROGRAM (N=33)	M SD	35.34375 (21.30214)	24.78570 (10.82539)	+ 10.55805	p<.05
1st YR ARTS PROGRAM (N=21)	M SD	39.90476 (10.63489)	26.77778 (11.01099)	+ 13.12698	p<.05
2nd YR ARTS PROGRAM (N=12)	M SD	26.63636 (17.86769)	15.90000 (11.58840)	+ 10.73636	p<.05
CONTROL GROUP NO ARTS (N=30)	M SD	15.33333 (11.90040)	11.16667 (6.89016)	+ 4.16663	n.s.

5th GRADE NCE SCORES - Comparisons between groups

NOTE: TOTAL ARTS GROUP includes students in program for both 1 and 2 years. 1st YR ARTS GROUP includes students in arts program for first time in '92-'93; 2nd YR ARTS GROUP includes students in program for '91-'92 & '92-'93.

**TABLE 2 - A : Total Arts Group and Control Group
English and Reading Score Comparisons**

		TOTAL ARTS GROUP (N=33)	CONTROL GROUP (N=30)	DIFFERENCE	SIGNIFICANCE
ENGLISH '93	M SD	35.8750 (16.41662)	15.03333 (11.90040)	+20.84167	p < .01
ENGLISH '92	M SD	29.26087 (11.74431)	17.74074 (16.92652)	+11.52013	p < .01
ENGLISH '91	M SD	24.67852 (10.82539)	12.83333 (6.64433)	+ 11.84519	p < .01
READING '93	M SD	35.34375 (21.30214)	15.33333 (13.54516)	+ 20.01042	p < .01
READING '92	M SD	22.77419 (11.94909)	15.45833 (6.87136)	+ 7.31586	p < .01
READING '91	M SD	24.78570 (10.82539)	11.16667 (9.17958)	+ 13.61903	p < .01

**TABLE 2 - B : 1st Year Arts Group and Control Group
English & Reading Score Comparisons**

		1st YR. ARTS GROUP (N=21)	CONTROL GROUP(N=30)	DIFFERENCE	SIGNIFICANCE
ENGLISH '93	M SD	39.35714 (18.13881)	15.03333 (11.90040)	+ 24.32381	p< .001
ENGLISH '92	M SD	33.07692 (11.78602)	17.74074 (16.92652)	+ 15.33618	p< .001
ENGLISH '91	M SD	27.30769 (8.08687)	12.83333 (6.64433)	+ 14.47436	p< .001
READING '93	M SD	39.90476 (21.91325)	15.33333 (13.54516)	+ 24.57143	p< .001
READING '92	M SD	25.90000 (10.76984)	15.45833 (6.87136)	+ 10.44167	p< .001
READING '91	M SD	26.77778 (11.01099)	11.16667 (9.17958)	+ 15.61111	p< .001

**TABLE 2 - C : 2nd Year Arts Group and Control Group
English and Reading Score Comparisons**

		2ndYR. ARTS GROUP (N=12)	CONTROL GROUP(N=30)	DIFFERENCE	SIGNIFICANCE
ENGLISH '93	M SD	31.00000 (12.97005)	15.03333 (11.90040)	+ 15.96667	p< .001
ENGLISH '92	M SD	24.300000 (10.17677)	17.74074 (16.92652)	+ 6.55926	n.s.
ENGLISH '91	M SD	21.87500 (5.30330)	12.83333 (6.64433)	+ 9.04167	p< .001
READING '93	M SD	26.63636 (17.86769)	15.33333 (13.54516)	+ 11.30303	p< .05
READING '92	M SD	17.09091 (12.36491)	15.45833 (6.87136)	+ 1.63258	n.s.
READING '91	M SD	15.90000 (9.89332)	11.16667 (9.17958)	+ 4.73333	n.s.

**TABLE 3 - A : 5th Grade NCE Spanish Reading Scores
1992 - 93 Comparisons**

		SPANISH '93	SPANISH '92	DIFFERENCE	SIGNIFICANCE
TOTAL ARTS PROGRAM (N=21*)	M SD	51.52174 (16.89236)	44.87097 (25.35579)	+ 6.65077	p < .05
1st YR ARTS PROGRAM (N=16*)	M SD	47.31250 (14.63657)	41.47619 (24.54510)	+ 5.83631	n.s.
2nd YR ARTS PROGRAM (N=7*)	M SD	62.14286 (7.30981)	52.00000 (26.84937)	+10.14286	n.s. (p= .06)
CONTROL GROUP NO ARTS (N=24*)	M SD	43.04166 (14.69540)	42.60714 (17.20538)	+ .43452	n.s.

TABLE 3 - B : 1st Year Arts Group and Control Group Spanish Score Comparisons

		1st YR. ARTS GROUP (N=16*)	CONTROL GROUP(N=24*)	DIFFERENCE	SIGNIFICANCE
SPANISH '93	M SD	47.31250 (14.63657)	43.04166 (14.69540)	+ 4.27084	n.s.
SPANISH '92	M SD	41.47619 (24.54510)	42.60714 (17.20538)	- 1.13095	n.s.

TABLE 3 - C : 2nd Year Arts Group and Control Group Spanish Score Comparisons

		2nd YR. ARTS GROUP (N=7*)	CONTROL GROUP(N=24*)	DIFFERENCE	SIGNIFICANCE
SPANISH '93	M SD	61.14286 (18.85408)	43.04166 (14.69540)	+ 18.10120	p < .05
SPANISH '92	M SD	52.00000 (26.84937)	42.60714 (17.20538)	+ 9.392860	p < .05

TABLE 3 - D : Total Arts Group and Control Group Spanish Score Comparisons

		TOTAL ARTS GROUP (N=21*)	CONTROL GROUP(N=24*)	DIFFERENCE	SIGNIFICANCE
SPANISH '93	M SD	51.52174 (16.89236)	43.04166 (14.69540)	+ 8.48008	p < .05
SPANISH '92	M SD	44.87097 (25.35579)	42.60714 (17.20538)	+ 2.26383	n.s.

* Spanish Reading Scores were not available for all of the participating students. With missing data pairwise deleted, results were available for 24 of the 30 students in the comparison group and 21 of the 33 students in the art program, including 16 of 21 first year students and 7 of 12 in the second year. The test was not administered in 1991.