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Question

How can the study of art, taught through an interdisciplinary approach to the study of social studies, promote a deeper understanding of social studies concepts in fifth-grade students?

What art education instructional strategies demonstrate evidence of student understanding of social studies content?

RATIONALE

Elementary fifth-grade students lack opportunities for learning social studies content, developing research skills in social studies, and using critical thinking in learning social studies content. Elementary schools fail to meet students' social studies curricular needs (Flannery, 2004). Statewide standardized testing facilitates the narrowing of curriculum to test taking skills preparation and the subjects of math, science, and reading. Students have limited curricular focus on social studies or art because it is not covered on the test. Additionally, students' varied cultural, educational, cognitive, or language development affects their prior knowledge of social studies concepts. With a limited knowledge base, students arrive in middle school unprepared in social studies, ignorant of the cultural and historical context of ideas.

In addition to the lack or absence of social studies content, arts education is marginalized in the school community. These subject areas are not valued as core knowledge for students. Arts facilities are the first to be with school overcrowding or funding cuts. Teachers of the arts feel insecure about their facilities and jobs. In reaction to this status, art teachers seek evidence that the arts can and do contribute to student academic achievement (Hamblen, 1997).

The National Council for the Social Studies defined social studies as "the integrated study of the social sciences and humanities to promote civic competence. (National Council for the Social Studies, 2004)". The council identified this field of study as multidisciplinary and interdisciplinary, teaching methods appropriate for the

primary level of k-12 social studies programs. The council identified fine arts as a strategy for students to communicate their understanding of social studies concepts.

There is a need for instructional strategies that address social studies curriculum in the elementary school. As an art teacher, I felt this was an opportunity to contribute to the academic achievement of my students. I looked to art education to provide guidance. Integrated interdisciplinary instruction would provide a method for introducing social studies concepts to my students by creating connections between social studies and art. Evidence of how students gain understanding of social studies through arts education would help support the use of an interdisciplinary teaching methodology to address the social studies curriculum needs of elementary students.

I chose to focus on a fifth-grade class of 34 students in my suburban elementary school. The class is primarily composed of Hispanic and African-American lower middle class students. The students are diverse in language, cognitive abilities, ethnicity, and prior knowledge about art and social studies.

The ideas for this study were motivated by my participation with this class in an interdisciplinary teaching grant. The grant's goals were to implement interdisciplinary teaching strategies about Africa and African art and provide evidence of student learning. I wondered about the nature of student learning that allows learners to make connections between subject areas. A deeper understanding of how and which interdisciplinary teaching strategies work through evidence of their effectiveness would provide a possible solution to the problem of providing a social studies education to elementary students.

Literature Review Antecedents

Research indicates instruction in different subject domains has been integrated with arts instruction as a focus for study such as science (Schramm, 1999), literature (Lechner & Barry, 1997), geography (Steiner, 1993), history (Erickson, 1995), and mathematics (Phillips & Bickley-Green, 1998). I based my interdisciplinary instructional strategies on research that focused on the integration of arts education with another subject domain. As an art teacher, art criticism and art making are essential components of the art curriculum. Research indicates these components have been integrated with other subject domains (Arnold, 1998; Burger & Winner, 2000; Phillips & Bickley-Green, 1998; Erickson, 1995; Steiner, 1993). Furthermore, research has indicated that curriculum development including planning time (Arnold, 1998), identification of shared domain concepts (Burger & Winner, 2000), teacher perceptions of interdisciplinary instruction (Lechner & Barry, 1997), and teacher collaboration (Schramm, 1999) are issues in the planning of interdisciplinary instruction that can have impact on instructional effectiveness (Winner & Cooper, 2000).

Arts Education and Academic Achievement

Research indicates a relationship exists between arts education and academic achievement. Ellen Winner and Monica Cooper (2000) reviewed and identified relevant research studies on the relationship of arts instruction to academic achievement, categorized these studies by various criteria such as whether the study was correlational or experimental, and analyzed them based on outcomes and effect size. They identified common instructional issues between the arts and

subject domains that may impact instructional effectiveness including learning skills, motivation, and the school environment. Learning skills include focusing, close observation, critical thinking, and problem solving. Both the arts and other subject domains require the effective use by students of learning skills. According to the researchers (Winner & Cooper, 2000), integrating art into the curriculum could promote attitudinal changes in the student that could influence their study of a subject area. They maintain that interdisciplinary art instruction may promote student self-confidence in the learning process, perseverance, awareness of work quality standards, sense of belonging to a collaborative learning community, and learning enjoyment. Finally, a school that values integrating art with the curriculum may also attract teachers, students, and teaching strategies that may influence academic improvement. Their research suggests a difficulty in measuring the influence of the art learning process on academic outcomes and that further study is needed in the effectiveness of art teaching strategies that explicitly help students connect and apply the learning strategies of art to another subject domain. The meta-analyses of the studies concluded that there was a positive and significant relationship between arts education and academic achievement but no causal relationship has been shown (Winner & Cooper, 2000).

Appropriateness of Interdisciplinary Instruction for Elementary Students

Research indicates that elementary age students can understand historical concepts in art. Mary Erickson (1995) explored questions such as whether or not primary students can understand an artwork in the context of the historical culture, if they are able to consider it from the perspective of the historical viewer, and if they

are able to consider it from the perspective of the historical culture. Students answered short answer and multiple-choice questions in response to inquiry about a selected artwork. In her analysis of student responses, she found variability in the students' abilities to make these interpretations yet there were significant instances where students did reveal a depth of historical understanding (Erickson, 1995).

Strategies for Interdisciplinary Instruction

Research shows that hands-on art activities and teacher collaboration enhance student learning. In a North Carolina project that integrated math and art with students from grades 3-7, math scores improved after a series of integrated lessons (Phillips & Bickley-Green, 1998). Teachers collaborated by participating in a in-service training to plan integrated lessons ahead of time. Hands-on art activities were correlated to specific math concepts. A pretest measured student knowledge of math followed by a post-test that indicated significant learning growth. In another study, a high school teacher studied whether an integrated unit of instruction would indicate connections by students in learning, promote teacher collaboration, and improve student attitudes for learning (Arnold, 1998). The three subject area teachers held informal meetings to plan the curriculum, which integrated art, physics and geometry, instructional strategies, and assessment. Students produced learning artifacts combining art techniques and concepts with math and physics. Pre- and post-instructional surveys were developed for students and teachers. In addition, a written test for subject content understanding was developed for students. Student surveys indicated a positive attitude toward integrated instruction while the written test showed evidence of students making connections

between disciplines. The faculty also responded in the survey positively to the collaboration experience and to the value of integrated instruction.

Background/Context/Methodology

Art class instructional time with this class was limited to one hour once a week on the same weekday. Art instruction occurred in the art laboratory room. The collaborating teacher instructed her students in her own classroom.

Initially I researched and developed an interdisciplinary curriculum, specifically focused on Africa and African art. Planning interdisciplinary curriculum and assessment instruments was done on my own time, not during school hours. The African drum was chosen as the art focus for this class. I chose this topic because the grant project included a musical component in preparation for a variety show at the school and the drum serves as an example of African art. Social studies concepts were identified that connected to the art including geographical location of the object and the cultural function of the object. I found visual, oral, and written informational resources that I made accessible to the collaborating teacher and the students. In addition, collaboration was supported with the classroom teacher when I monitored her classroom on a weekly basis for progress on the Africa lesson. The classroom teacher decided lesson content focus and choice of instructional strategies. I planned that students would participate in social studies content related activities in the art class and the regular classroom over a nine-week period.

My art instructional plan incorporated social studies content and activities that emphasized research and critical thinking skills into the art lesson. Instructional

strategies included presentation of visual, written and oral information about Africa and African art, art-making activities, oral and written inquiry, and home learning research assignments. Images of African geography, wildlife, people, and culture were displayed around the art room. Written handouts provided the students with reading material for in-class research. Questioning of students, orally and in writing, provided me opportunities to research into the student's prior knowledge of Africa, their questions about Africa, awareness of research strategies, and their attitudes about the lesson. Information from these questionnaires was analyzed. I categorized the information by theme and tabulated the frequency of responses. The assessment of student prior knowledge about Africa and the drum served four purposes: to provide a baseline of student knowledge, to provide the students an opportunity to become engaged with the social studies area of study, to let the student know that their thoughts are valued, and to provide data of current student interest in the subject to prepare for future instruction. Students practiced using social studies concepts in different media including oral discussion, writing artifacts, and creating visual images.

The African art-making drum lesson progressed through a series of steps. Students initially were exposed to the sight and sound of an actual African drum. Then students observed images of African geography, wildlife, people and African art through video, posters, and actual objects. They listened to a recording of African drum music. In an in-class drawing activity, students illustrated the drum characteristic of cylinder shape. Students were then asked to draw their own complete drum design. Next, the students painted a pre-formed cardboard cylinder

in collaborative groups. After this, I presented African mask concepts through photo images, reading material, and an actual mask. Inquiry-based discussion followed revealing student understanding about the characteristics and purposes of African masks. Students then drew their own mask designs. Students applied these masks collaboratively to the three-dimensional painted cylinder forms.

In the homeroom class, the teacher collaborated by addressing African social studies concepts of geography and culture. In her class each student was assigned an African country and was required to research and produce a report with an accompanying student made doll, dressed in a native costume. Students then orally presented their doll and a synopsis of their research to the class.

Art class, homework, and homeroom learning artifacts were collected. Teacher made rubrics were developed to analyze the student artifacts for the effectiveness of instruction and student learning.

Research Tools

I obtained data from a variety of sources. One fifth-grade class was the focus for data collection.

- I photographed students in the art-making process and while giving presentations of their research.
- I took audiotapes of student-teacher inquiry in the art class and of students giving presentations of their research.
- I administered informational questionnaires to the students at the beginning and the end of the learning process.
- I administered attitude surveys to the students and the teacher at the end of the learning process.
- I reviewed examples of the students' completed artwork and research artifacts.
- Notes of conversations with students and the classroom teacher.

Data/Results

I completed a curriculum unit on African social studies and art. Instruction was delivered on African geography, history, wildlife, people, and art to the students and the collaborating teacher.

The instructional environment influenced the student's motivation to participate and outcomes in this learning process. When in attendance and monitored by the art and/or homeroom teacher, students actively participated in oral discussion and completed written and art artifacts. Students did not have evidence of learning when they were not in attendance or were not actively engaged in learning.

Initially, I administered 30 questionnaires during art class to assess the student's current knowledge of Africa with 30 students completing the assessment. The students communicated a list, through writing, of what they already knew about Africa. The majority of student responses were in the animal category which illustrated knowledge of commonly identified African animals, such as "lion" and "giraffe." The second most common response was in the landscape category, which illustrated knowledge of "jungle" or "desert."

After assessing what the students knew about Africa I wanted to know what their prior knowledge was of the drum. The questionnaire consisted of two sections. I administered 34 questionnaires with 29 students completing all two sections. In section one, students were asked to communicate what they already knew about the drum by writing four or five short sentences. The greatest number of student responses stated that the drum was a musical instrument that you can play with your

hands or a stick, was a percussion instrument that makes a loud noise through hitting it, and that it came in different sizes, shapes, and colors. In section two of the questionnaire I wanted to facilitate student motivation to learn the social studies and art content of the lesson through stimulating student curiosity. In order to accomplish this I asked students to communicate what they wanted to know about the drum by writing four or five questions. Three student-generated questions surfaced as major areas of student interest: inquiries into the drum's origination, construction materials, and construction technique.

I focused on research skills as concepts shared by social studies and art. Class discussion identified methods of research including observation and watching videos, reading books, and the analysis of artifacts. In order for students to make explicit connections between disciplines, students were asked to communicate, in writing, research skills shared by the disciplines. A questionnaire in research methods was administered. Students were asked to fill in short answers to questions referring to how and where to find the answers to their questions about Africa and drums. The most popular categories were visual and sound media including movie, radio, and television, or to inquire with a person including an expert, teacher, or an African person. The least accessed category was artifact including pictures, painting, and music.

Research assignments, by both the art teacher and the homeroom teacher, supplemented class instruction over the course of nine weeks. Assignments included research on African wildlife, African tribal people, and creative short story writing on African drums. In art class, 50% or less of students completed art home

learning research assignments. Research assignments completed reflected the copying of text from the Internet or library sources. The information from the reports did not resurface in their oral or written responses in class. Based on a homeroom teacher interviews and artifacts, more than 90% of the class students completed social studies homework research activities for the homeroom teacher.

Photographs documented the students' art making activity in constructing a drum and in making their homeroom research presentations. Photographs were taken at different stages in the art works development over the nine-week period. All the students in attendance participated in making art. For example, students are seen holding the cylinder form in their hands, tapping the cylinder, drawing African mask designs, and attaching designs to the cylinder.

Audiotapes orally captured evidence of student learning. Students were asked to read handouts and their homework research. At a later art class students were questioned about what they had learned. Student responses revealed whether they had read or not read the material. I noticed how some students imitated the language of their reading in their oral sentences. Student A gives as his reply to the oral inquiry "Why do you think African use drums?" "To communicate" This is a direct quote from the reading. This imitation was also evident in other activities. For example, some students imitated the cylinder shape into their drum design. In addition to evidence of imitation, students also provided evidence of applying new knowledge, after instruction, in writing assignments, artwork, and oral discussion. For example, students integrated new knowledge into creative writing stories. The students wove ideas read and discussed in class into the characters and plots of the

stories. Student B included the ideas of communication, moral (a characteristic of African folktales), and ceremony in her African drum story. Imitation and application in a new context were both evident in student use of concepts.

Three closing questionnaires were administered to the students. Twenty-eight students responded out of a total of 29 participants. Questionnaire #1 asked the students to write four or five short sentences on what they had learned about African drums. Several concepts surfaced in the students' writing about what they had learned: that drums can communicate messages, that African's believe spiritual communication is possible through drum playing, drums are used in African ceremonies, drums are hollow, drums are constructed with a membrane, the membrane enables the sound, the membrane may be made of animal skin, and that drums are used by African people. Questionnaire #2 asked the students to communicate the materials, steps of the art-making process, and theme of the artwork. A majority of the students were able to list materials used in the project. Fifty per cent or more responses listed painting, drawing, and assembly as important steps. Less than 50% of the student responses listed thinking, making a mask, or making a membrane as a step in the art-making process. The majority of responses for the theme of the artwork mentioned Africa, the art-making process, or drum. The next largest number of responses either mentioned people, African culture, communication, or mask. Finally, a questionnaire asked the students to communicate in writing their attitudes about the whole African lesson and continuing interest in learning about Africa. Twenty-eight students responded out of a total of 29 participants. All of the students agreed that it was important to learn about Africa.

When asked why this was important, out of 29 responses, 13 stated to discover or know a new place, country, culture, or people and 12 stated to know or to understand. Students were asked further if they wanted to continue to learn about Africa. Twenty-two out of 29 students responded favorably to this question.

Analysis of Data

Planning conversations between the collaborating teacher and me were stolen moments taken during class transit, running into the teacher in the hall, or interrupting her class because planning time for teacher collaboration is not provided in the school day.

Student attendance in the art class is important because of the limited instructional time and the length of time between class meetings. Due to absence, individual students missed whole steps in the learning and assessment process. Students not in attendance have difficulty catching up on missed concepts and experiences and the teacher has limited time and data for individual remediation.

The preliminary questionnaire provided me with a baseline of students' prior knowledge. The student had an opportunity to become engaged with the social studies area of study, having taken time to think, formulate, and communicate their prior knowledge. Open-ended inquiry allowed the student to reveal their thoughts in a non-threatening way acknowledging that their thoughts were valued. Analysis of responses revealed the focus of the students' prior learning about Africa was in landscape and animals. Few comments revealed any knowledge of African people, history, or culture. This information illustrated gaps in student knowledge. Further instruction was shaped by this information. For example, a drum in the classroom had African animal illustrations all around it. After discussing the animals, the focus of student interest, I began inquiry into why animals would be placed on a drum. Students were asked to connect African animals to the idea of drum. Students engaged in expressing theories about this relationship. For example one student

expressed that the use of designs on the drum was part of "tradition". In another example, students communicated they knew a drum was a percussion instrument. We discussed the meaning of percussion. Further instruction introduced the hearing process and its relationship to the structure and playing of the drum. This served as the departure point for discussion on the use of the drum as a form of communication. An audiotape documents a student building her knowledge base by communicating a detailed description of the hearing process, the scientific principles of sound, and how it related to the drum. Research into student prior knowledge was a successful strategy for finding gaps in student knowledge and points of future instruction to make connections between social studies and art.

The students communicated their views about research methods after inquiry/discussion about research methods. Results showed that students were most aware of videos and a teacher/expert as resources for information. The observation of or listening to artifacts was not significant. Students have limited experience with direct inquiry and analysis of artifacts. They are more familiar with sources of information detached from their source, relying on secondary sources for information. They copy information without reading it. Some students have little practice in processing what they learn from research. Inquiry and discussion was not enough to make an impression on the students about the value of art analysis as a research method.

Reading proved to be an effective way of communicating ideas to the students about the African drum. After reading a handout or research, inquiry with the

students helped provide me with information about their understanding. Students who read the concepts were able to quote from the reading.

Follow-up questioning was an instructional strategy that helped illuminate the depth of the students' understanding. Quoting phrases from reading was a form of imitation and did not reveal the students' understanding. My students had diverse abilities in comprehension of vocabulary, which affected their understanding of concepts. Follow-up questioning gave the student an opportunity to explore the meaning of their words and to add or connect to other ideas they already understood.

Art making was a successful strategy for making a connection between social studies and art. Photographs illustrate the students actively discovering the concepts of shape, size, sound, and design when they touched the pre-formed cylinder. The creation of the drum artwork, including placing a membrane on a cylinder and holding the hollow object, communicated concepts to the student through experience. Some students referred to these ideas in the written commentary of what they had learned, or in audio taped discussion. The idea of membrane was new to many of the students and the act of making one and assembling it on the drum, documented in photographs, was a learning experience for some students. Through understanding of membrane and percussion, students were able to understand the social purposes of the drum as a tool of communication as well as for music.

Completion of homework assignments was a problem as an instructional strategy for the art class. The majority of the students were not motivated to do art class

homework. There was no evidence of learning from students who did not do the work. Evidence of learning only showed when students had read the research assignment they had produced. The creative writing assignments were more successful for those who participated. Students illustrated ownership of ideas when ideas discussed in class or research reemerged in the students' creative short stories about the African drum. Reasons for lack of student participation in homework include limited time with the art teacher, inability to daily monitor student progress by the art teacher, and little value placed on the art grade by some students. In contrast to art class homework, homeroom class research assignments were enthusiastically embraced by most of the students. Students were anxious for me, and their regular teacher, to see their work. The homeroom teacher was more influential in getting her students to do homework because of her closer relationship with them, her daily monitoring of their progress, and the students' valuing her class grade. After the homeroom teacher began her Africa lessons, students displayed more enthusiasm in art class. Based on student and teacher interviews, discussion occurred in her class about African tribal culture and geography. Collaboration with her promoted student enthusiasm in the art class.

Students' reflections on what they had learned revealed social studies concepts that were not present in their initial statements of knowledge about Africa. Students were able to communicate their understanding about the purposes of the drum in African society. Students demonstrated they understood that the drum was an object that required construction by people.

Finally, students demonstrated that the drum was an object reflective of African culture. The social significance of the drum was now part of the students' perceptions of Africa in addition to concepts of animals and landscape.

Student responses to the attitudinal survey reflected a positive learning experience for the student. This positive attitude will support future motivation in social studies and art learning. The lesson experience supported the students' positive attitudes towards continued learning and learning about a new place.

Policy Implications

The art object inherently possesses references to social studies. The art object reflects the time, place, and people of its origin. *The study of art can promote understanding of social studies concepts when the instructor plans and implements instructional strategies that directly illustrate these connections to the student. All teachers need to be educated about art history as a resource for instruction.* The student can make connections between art and social studies concepts when they are actively engaged in the learning process. The learning environment affects the teacher's ability to instruct and the student's ability to actively engage in the learning process. Social and structural issues shape this learning environment. These issues affect the student's learning outcomes.

Instructional strategies that demonstrated the most evidence of student learning were in-class inquiry, hands-on activities, and creative writing.

Each strategy required the students to construct images or communicate ideas that required them to apply new social studies concepts. *Students need to manipulate*

and construct visual or verbal communication as an opportunity in applying new knowledge.

Teacher's need dedicated planning time during their working hours to research, write interdisciplinary curriculum, and collaborate with teachers. The work involved in planning can be a hardship for teachers who cannot dedicate time after work.

Student attendance in the art class is important and must be encouraged because of the limited instructional time and the length of time between class meetings. Due to absence, individual students missed whole steps in the learning and assessment process. Students not in attendance have difficulty catching up on missed concepts and experiences and the teacher has limited time and data for individual remediation. However, student absence is an unavoidable situation. Possible solutions include increasing the frequency of art class and increasing planning time for collaboration and communication with the homeroom teacher. *Homeroom teacher cooperation*, evidenced by a desire to provide art instruction remediation for absent students, would help keep their student up to date with art class instruction. Unfortunately, homeroom teachers are reticent to cooperate because remediation for another teacher from another subject area takes time away from the homeroom teacher's instructional time. In the elementary school, standardized testing requires the homeroom teacher to be accountable for instructional time that is focused on the test and student test results. *The school culture needs to show support for alternative instructional strategies, such as art education, since art education is positively correlated to student learning.*

Teachers need to do action research in their classroom in order to acquire data for instructional planning. Decisions about instruction can be made on data gathered through inquiry. Inquiry into student prior knowledge acquires data that serves as an important tool for instructional planning. Students can be comfortably engaged in the learning process through inquiry. Inquiry into the student's knowledge base may need to be done several times during the lesson. Students eagerly engage in discussion or activities that directly reflect their curiosity.

Students need to be taught how to be actively engaged in the research process and how to report data from their sensory experience of artifacts. I shaped the instructional plan, based on the students' responses to the research questionnaire, by including an art analysis activity of an African mask. In a photograph, a student places an actual mask on his face and orally identifies characteristics of his experience to the class. This type of experiential training will help connect the analysis of an artifact to the other forms of research familiar to the student and emphasized in the regular classroom.

Instructional time was spent in presenting social studies content to the students through different forms of communication. *A variety of instructional strategies help students to learn.* Repeating ideas in different forms, such as reading and hands on activities, reinforced opportunities for students to learn. In questioning students either responded with the shortest reply or repeated the information from the reading verbatim. I wanted to know more about the student's understanding of the concept. Follow-up questioning allowed the student to practice giving a fuller context to their ideas and the teacher to hear evidence of deeper student understanding.

Experiential learning needs to be incorporated into instruction. Behaviors observed in my students include passivity towards learning activities and formulaic oral and written responses. It was different with hands-on activities. The combination of sensory experience supported by pre- and post-activity discussion seemed to give the students a sense of ownership of their idea. It was as if the idea truly. Experiential learning is time consuming and can be expensive. It requires preliminary planning and materials distribution. It can be messy. Hands-on activities should be an integral part of student instruction because it is effective.

Art homework needs to be supported outside of the art class. The differences between student participation in art class and regular class homework assignments illustrated that frequency and duration of instruction, the relationship of the teacher, student, and parent, and the value placed on the assignment by the student, affect student motivation in doing homework. I believe that if homeroom teachers monitored the art homework of their students and supported this work as actively as they would their own, there would be higher rates of student participation. Additionally, I believe student participation in art class and homework would increase if the parents, teachers, and students placed a higher value on learning art.

References

- Arnold, Douglas E. (1998) *Action Research in Action: Curricular Articulation and Integrated Instruction*. Bulletin, March, Vol.82, Number 596, p. 74.
- Burger, Kristen and Winner, Ellen. (2000) *Instruction in visual Art: Can It Help Children Learn to Read?* Journal of Aesthetic Education, Fall/Winter, Vol. 34, Nos. 3-4, p. 277.
- Erickson, Mary. (1995) *Second Grade Students' Developing Art Historical Understanding*. Visual Arts Research, Spring, Vol.21, Number 1 (Issue 41), p. 15.
- Flannery, Mary Ellen (2004) *FCAT focus hurts history*. The Miami Herald. February 22, 2004, p.6B.
- Hamblen, Karen A. (1997) *Second Generation DBAE*. Visual Arts Research, Fall, Vol.23, Number 2 (Issue46), p. 98.
- Lechner, Judith and Barry, Nancy H. (1997) *Multicultural Education through Art, Literature, and Music: A Study of Preservice Teachers' Perceptions Of Appropriate Materials And Methods*. Journal of Research and Development in Education, Winter, Vol. 30, Number 2, p. 87.
- National Council for the Social Studies. (2004) Available <http://www.socialstudies.org/standards/introduction>.
- Phillips, Phil and Bickley-Green, Cynthia. (1998) *Integrating Art and Mathematics*. Principal, Vol. 77, Number 4, p. 46.
- Schramm, Susan L. (1999) *Intellectual Tension: Connecting Biology and Visual Art in the Secondary Curriculum*. American Secondary Education, Vol. 27, Number 3, Spring, p.3.
- Steiner, Stanley F. (1993) *Preparing Prospective elementary Teachers to Teach Geographical Features with an Integrated Approach*. Journal of Geography, September/October, Vol. 92, Number 5, p. 231.
- Winner, Ellen and Cooper, Monica. (2000). *Mute Those Claims: No Evidence (Yet) for a Causal Link between Arts Study and Academic Achievement*. Journal for Aesthetic Education, Vol. 34, Nos. 3-4, Fall/Winter, p.11.

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