Metaphor: The Hidden Link between Visual Literacy and Learning

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Abstract: Visual Thinking Strategies (VTS) have been proven to enhance learning abilities in children. This study will examine how the use of metaphor might affect the development of fourth graders' verbal and written abilities at three schools in the Miami-Dade County Public School system.

As educators struggle to deal with falling literacy rates, many schools have turned to creative sources of expression and communication in an attempt to ignite student interest and understanding. For example, innovative Visual Literacy (VL) programs seek to provide students with an opportunity to deepen their understanding of targeted curriculum areas through art-based explorations. John Debes (1969, 1972) crystallized the concept of visual literacy by giving the theory its first, and longest lasting definition; he explained visual literacy as the ability to understand and use images, including the ability to think, learn, and express oneself in terms of images (Debes, 1972). Proponents of visual literacy maintain that students who engage in these sustained, art process-oriented experiences cultivate creativity and risk-taking while reinforcing critical thinking and communication skills.

In the late 1980s, cognitive psychologist Abigail Housen and veteran museum educator Philip Yenawine developed Visual Thinking Strategies (VTS) as an elementary school curriculum designed to teach Visual Literacy ("Who is Vts," 2001). As a visual arts program, Visual Thinking Strategies (VTS):

> Uses a student-centered method to examine and find meaning in visual art; uses art to teach thinking, communication skills, and visual literacy; measurably increases observation skills, evidential reasoning, and speculative abilities, and the ability to find multiple solutions to complex problems; uses facilitated discussion to practice respectful, democratic collaborative problem solving among students that transfers to other classroom interactions, and beyond; uses eager, thoughtful participation to nurture verbal language skills, and writing assignments to assist transfer from oral to written ability; uses the Web to develop independence and computer skills as well as to assist teacher preparation; produces growth, including visual literacy and greatly enhanced verbal and thinking skills, in all students, from challenged and non-English language learners to high achievers; encourages art museum visits to underscore connections to art and to integrate a community resource into students' lives; and meets state standards in art, language and social studies; improves test scores in reading and writing. (What is Vts, 2001)

In the VTS curriculum, students examine carefully selected art images as teachers conduct open-ended discussions about sequenced works of art using developmentally based questions. Teachers begin by presenting images with a slide projector and asking the following open-ended questions: "What's going on in this picture?" "What do you see that makes you say that?" and "What more can we find in the picture?" Students verbalize their responses, opinions, ideas and interpretations, while teachers act as a facilitator, paraphrasing each student's comments, and linking observations when appropriate. Students are also encouraged to support

opinions with evidence, to listen and share information and ideas, and to construct meanings together. Ultimately, growth is stimulated by looking at art of increasing complexity, responding to developmentally-based questions, and participating in group discussions that are carefully facilitated by teachers. In addition, VTS has produced measurable growth in all learners across cultures, language/background experience, and learning abilities.

With research they have conducted over the past fifteen years throughout the United States and Eastern Europe, Yenawine and Housen have affirmed the efficacy of using the VTS curriculum. Teachers report that the majority of children who participate in the VTS curriculum learn to read more quickly, have greater comprehension skills, and are more capable of expressing whole concepts and completing whole thoughts in a sentence (Directory of Studies, 2001). After completing the ten-week VTS curriculum, students' writing improves as well. Students are more likely to write in complete sentences, which include more observations, to supply reasons to back up opinions, and to speculate among possible conclusions. Consequently, visual literacy is a valuable resource in aiding students to improve their reading, writing, and communication skills.

The link between art, visual literacy, teaching, and enhanced understanding remains elusive. When discussing the results of VTS, Yenawine himself cannot explain why children, after looking at a particular piece of art work and discussing it, might then be able to express their ideas and feelings in whole thoughts and sentences (Yenawine, 2003).

Visual art, from the simplest representation to the most complex piece, is primarily concerned with the creation of metaphor. Each mark on a canvas or piece of paper stands as an object in itself and as a metaphor, or pointer for, to or about something else. According to Lakoff and Johnson (1980), "the essence of metaphor is understanding and experiencing one kind of thing in terms of another" (p.5). Just as we use verbal language to communicate about and construct reality via a complex structure of metaphors, so too does art continually communicate and create in the language of visual metaphors. As metaphoric phrases and words give us insights into how things relate to each other, so too does visual art show how things are created from the ground up. When children are given the opportunity to examine how disparate elements are intentionally put together to create a particular piece, using color, shape and form, they begin to understand and experience "one kind of thing in terms of another." By understanding and experiencing metaphors in a particular format and between particular objects, it becomes easier for them to make these connections in other areas of learning, and even possibly to make their own metaphors.

Metaphor is as essential to the social studies as it is to the visual arts. Whether children are studying the culture of China, the geography of Florida, or the composition of their local government, they must be able to make connections between symbols and their meaning. In order to understand how people and places both influence and reflect social, political, and cultural values and attitudes, and to comprehend the historical process of change, children must intuitively grasp and use metaphor.

In 2002, the Wolfsonian Museum at Florida International University (FIU) was awarded a three-year grant from the U.S. Department of Education's Art in Education Development and Dissemination Program to enhance social studies education through an art-integrated curriculum in three Miami-Dade County Public Elementary Schools. This project, called *Artful Citizenship*, is a partnership led by The Wolfsonian at FIU with Miami-Dade County Public Schools (M-DCPS), researchers from FIU's College of Education, and a team of education researchers and evaluators from Florida State University. The four partners plan, develop, field test, implement,

evaluate, and disseminate *Artful Citizenship* as part of the core social studies curricula at grades 3, 4, and 5 at three Miami-Dade County public elementary schools that have a high percentage of students from low socioeconomic backgrounds. Teachers in these schools are being trained by Yenawine to use Visual Thinking Strategies with their students in order to provide them with the tools necessary to become visually literate.

Purpose

As a companion study to *Artful Citizenship*, the purpose of this study is to examine how the use of metaphor in the VTS curriculum might affect the development of fourth graders' verbal and written abilities at three schools in the Miami-Dade County Public School System. The questions considered include: How is metaphor used in the content of the VTS curriculum? Is metaphor used more by teachers or by students in the VTS curriculum? Does this ratio change through time? How is metaphor used in the pedagogy of the VTS curriculum? Do students use metaphor more in verbal or written discourse? Does the use of metaphor by the students change as they go through the VTS curriculum?

Theoretical Framework

Howard Gardner's theoretical framework, which examines the use of *multiple intelligences* in developing critical thinking tools, will be utilized in this study. In his book *Frames of Mind* (1983), and subsequent research, Gardner outlines the existence of eight ways of knowing, perceiving, and understanding the world around us: linguistic, mathematical, visual-spatial, musical, body-kinesthetic, naturalist, interpersonal, and intra-personal. Apart from the overt facilitation of visual-spatial intelligence, verbal-linguistic intelligence is fostered in several ways; for example, this can be seen manifested as students contribute to verbal discussions and most importantly, as teachers paraphrase each student's response. As teachers paraphrase, the students are introduced to concise and clear arguments, in addition to more complex vocabulary. Moreover, as students participate in discussions, interpersonal intelligence is demonstrated as students are given the opportunity to perceive and understand the different perspectives of their peers. Intra-personal intelligence is thus engaged as students continually assimilate and accommodate these perspectives into their thought structures. Everyone possesses all of these intelligences to some degree, asserts Gardner, and other ways of knowing are there, too, waiting to be discovered. Gardner emphasizes that one or two intelligences are often stronger and more fully developed in a person, although everyone has the capacity for nurturing all of them. The power of the model is its capacity for strengthening all multiple intelligences so that teachers can enable students to maximize their ability to respond, create, and perform in all academic areas.

Methods

A multiple-case study will be employed in which the researchers will use a mixed methods data analysis approach to examine how the use of metaphor in the VTS curriculum might affect the development of fourth graders' verbal and written abilities in three schools in the M-DCPS system. The case study design has been chosen because it has proven to be particularly useful when the research question is one of process (Merriam, 1998). Miles and Huberman assert that the use of multiple cases "strengthens the precision, validity, and stability of the findings of a single case" (p. 29). According to Tashakkori and Teddlie (2003), the mixed methods approach minimizes the inconsistencies or flaws inherent in a single method approach, and can yield richer, more valid, and more reliable findings than an analysis based on either the qualitative or quantitative method alone (Tashakkori & Teddlie, 2003).

This study will be conducted in six fourth grade classrooms at three schools in the M-DCPS. At least one of the teachers in each of the three schools will be FIU doctoral and master's

degree students who are National Board certified, or preparing for the National Board Certification. Mark Osterman, coordinator of educational programs at the Wolfsonian-FIU, an experienced VTS trainer, and curriculum supervisor for the *Artful Citizenship* project, will conduct a two-day training workshop for the teachers participating in the study. Data will be collected by the principal investigator and two graduate assistants in the Curriculum and Instruction program at FIU. The duration of the study will be from December 2003 to April 2004. Preliminary results of the study will be shared at the conference.

Data for this study will come from the following: taped recordings of teachers and students in the three M-DCPS as they engage in the teaching and learning of the Visual Thinking Strategies curriculum; written observations of teachers and students as they engage in the VTS curriculum; pre- and post-tests from the students; writing samples of the students as they address the images contained in the VTS curriculum; documents connected to the VTS curriculum; and primary and secondary source documents used in the fourth grade social studies curricula involved in the study. The pre- and post-tests will consist of students' written answers to a simple writing prompt, and will be administered at the schools. In addition, data will be collected during three site visits to the schools – one visit at the first VTS session, another visit at the fifth session, and another at the tenth session.

Pre- and post-test writing data will be analyzed using the Florida Writes rubric to measure for completeness of sentences, clarity and complexity of thought, and use of metaphors. The dependent samples T-test will be used to track changes over time. Tape recorded and written observations of teachers and students will be coded by the principal investigator and by the graduate assistants to ensure inter-rater reliability. Coding categories will emerge from the data itself. The data will be analyzed using ANOVA to look at changes over time, and teacher vs. student responses. VTS documents and Social Studies curricula will be chunked by emergent themes.

Significance

The VTS curriculum help students develop visual literacy, gain in language and thinking skills, and perform better on state mandated math, reading, and writing tests. For example, the Bard College/Red Hook School District Arts in Education Study found that elementary students who learned the VTS curriculum gained in their ability to engage in longer dialogues about art using more sophisticated vocabulary, and to view art from many different perspectives (Directory of Studies, 2001). A five-year study in Byron, Minnesota demonstrated that a cohort school that had used VTS since the 4th grade tested 23 percent higher on state tests in the 8th grade than the 8th graders in the same school the previous year, who did not have the luxury of VTS (Research Findings, 2001).

In this study, an attempt will be made to explain the reasons behind the success of VTS by deconstructing, through discourse analysis, the discrete elements used in the curriculum. The principle focus will be on metaphor even though the study will allow other possible essential elements to emerge as the investigators code the recordings of teachers and students while they engage in the teaching and learning of VTS.

Metaphors are a part of everyday speech that affects the ways in which we perceive, think, and act. Children seem to naturally use metaphor at a very early age. They readily pretend that dolls are people, sticks are swords, and they and their playmates are doctors and patients, understanding quite well that they are using one thing to mean another. Discovering and then consciously using metaphor in the highly successful VTS curriculum will allow teachers to be

more focused, critical, effective, and directed in both the pedagogical and content aspects of the VTS curriculum, and will help students make even more strides in their learning.

Conference Presentation

The investigators of this study readily admit that data will be lacking at the time of the conference. However, the presentation will compensate by consisting of a description of the VTS curriculum and the underlying theoretical framework, and a hands-on activity modeling the best practices of the VTS curriculum. Even though the data analysis will not be ready at the time of presentation, we strongly feel that the research and the hands-on activities will be of particular interest to many of the participants at the conference.

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