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Visual Arts and Writing: A Mutually Beneficial Relationship

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Abstract

This study focused on integrating art and literacy in elementary classrooms, grades 2-4, to benefit students' writing, language, visual art production and art appreciation. The curriculum linked explicitly art making and writing. Implementation in year one with newly trained teachers impacted student achievement positively. Self created pictures drawn before writing enhanced the quality of writing by presenting a physical reality and complex texturing not available to students otherwise. Both writing quality and quantity grew as compared with controls and the school district as a whole. Student artistic observation also improved but still reflected a generally low level. Achievement gains transferred into gains in standardized tests of language and reading.

Much of the early work in arts integration implied a link to academic achievement, however, the majority of publications connecting the two domains are often arts advocacy pieces failing to provide empirical evidence (Deasey, 2002). This study attempts to add to the growing body of evidence pointing to the positive effect of visual arts on literacy, writing and reading, while highlighting new directions for further investigation.

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This study assesses the impact of implementing an art integration curriculum in individual classrooms using *Picturing Writing* during the 2001-2002 school year. *Picturing Writing* (Olshansky, 1995) is an instructional strategy aimed at supporting contextual literacy activities with a specific focus on writing. Project RAISE (Reading and Arts Integrated for Student Excellence), a federally funded program designed to research the impact of arts integration on academic performance through a scaled up study of *Picturing Writing* and other art integration activities. The theoretical basis for the project's methodology is based on three studies that point to causality linking mental imagery and language facility, i.e. writing, and reading comprehension (Gambrell, 1993; Gambrell & Bales, 1986; Sadoski, 1985; Sadoski & Paivio, 1994) as well as a number of research reports by Olshansky (1990, 1994, 1995, 1998).

Theoretical Framework

While experimental and quasi-experimental designs provide some proof for the efficacy of arts integrated curriculum, the theoretical underpinnings of such a link is not well researched so the actual causal connection is still not clear. Some researchers hypothesize that visual art serves as a motivational entry-point to reading and writing engaging students in texts and reinforcing positive behavior (Burger & Winner, 2000; Ernst, 1994; Wilhelm, 1995). Other researchers step beyond the motivation hypothesis and try to identify a cognitive path linking art production and literacy processes such as reading and writing (Efland, 2002; Olshansky, 1998; Silver, 2001). The cognitive hypothesis stems directly from Vygotsky's (1978) work on the development of symbolic representations. Vygotsky described a process of increasing abstract representation, distancing the object from the symbol, and leading to higher order thinking. Seen from a Vygotskian perspective, visual art creation allows a wider range of expression than is available through language by calling on non-verbal resources for expression. The non-verbal symbols provide support for the development of higher order cognitive functions required for writing. The hypothesized cognitive path is therefore a semiotic connection between artistic and verbal linguistics signs.

Dyson (1986) extended Vygotskian interpretations by focusing on the interweaving of oral, visual, and written symbol systems. Dyson (1986) claimed that children construct new meaning in images as well as words. This is especially important in the early stages of learning to write as the writing process presents a significant cognitive load. According to Dyson (1986, 1987, 1988) young writers rely on multiple symbol systems to create more coherent and complex written products.

Smagorinsky (1997; Smagorinsky & Coppock, 1993, 1994) focused on the creative process in both art production and writing. Sigel (1970), in discussion of child development, argued that it is important for the thinker to distance himself from the object. Building on Sigel's (1970) distancing theory, Smagorinsky claims that "... students step back from their immediate experiences and create a physical or mental object that they could ponder... "(Smagorinsky, 1997). Smagorinsky (1993, 1997) proposed that the art served as a "non-linguistic' composing device that assisted children in expressing their thoughts.

A parallel can be drawn from the research connecting imaging and reading comprehension. Paivio and Sadoski (1994) hypothesized that increased reading comprehension through imaging is the result of parallel processing. The image allows processing of the same information through a different route, increasing both cognitive engagement and recall.

The model of art integration is viewed in this study as a triangle between the child and the creative process and the artwork, itself. We propose that the child creates and during the act of creation is involved in elaborative thought as well as composing. The artwork also serves a cognitive stimulus. Children make associations with the finished work, based on unintended elements that appear in the art (Andrzejczak, Trainin, Poldberg, 2004). For example, in watercolor, the paint takes on its own agency in the painting process and the finished painting may suggest ideas that the child previously had not considered. The finished product then is re-represented in written communication. The art plays a critical role as a mediating event for the compositional process.

We are indeed a visual species. Visual images are an integral part of our everyday world. These images communicate

the gestalt of an idea as opposed to written communication that relies on pieces, words, phrases, sentences, and chapters. It is the child/writer's opportunity to work through the whole, before beginning the writing process.

A brush floats across the damp paper, the paint swirls out creating whorls and blossoms of deep blue mixed with violet. The child sprinkles salt onto the night sky and stars appear. Crayon lines zigzag across this sky and an orange moon peaks out from behind jagged peaks. The child is creating symbols representing a story, with both time and spatial elements present in the artwork (Dyson, 1988). Writing is integrated with art, equal partners in creating meaning. The stars are the planets off in outer space; the zigzag lines are the paths of the flying saucer zooming across the sky. At the same time, the child is composing the story, he/she is creating a synthesis of ideas in paint and words, which later are transferred to written text.

Empirical Evidence

Burger and Winner (2000) report in their review of the evidence linking art and literacy achievement that motivation is the key to understanding the positive effect of art integration on student reading achievement. Wilhelm (1995) finds a positive effect of visual arts procedures on reading. In Wilhelm's study students created illustrations that *image* the stories resulting in heightened engagement. Further, study results suggest that artistic response helps less proficient and less engaged readers to develop more effective strategies to interact with text, increase comprehension, provide complex responses, and better retain information (Walsh-Piper, 2002; Wilhelm, 1995). These studies focus on reading and indicate that the visual-art creative process provides a high level of engagement for the student.

In the area of writing, Olshansky (1998) presents results that indicate a direct experimental effect of using the art making process as support for advancing literacy. She describes a process of using the creation of visual art as a part of the pre-writing process. In *Picturing Writing*, a visual art based writing process (Olshansky, 1998), the students are asked to create paintings and then use the painting as a pre-writing tool as part of the writing process. This connection provides the theoretical framework for this study

focusing on linking art and text creation.

In a recent study Andrzejczak, Trainin, & Poldberg, (2004) have found that visual-art creation enhances the writing process. In this study, students who made visual representations as a means of invention during writing were found to have used more time for elaboration of their ideas, to have generated more vivid descriptions of characters and setting, and to have used more precise vocabulary than comparison students, who experienced only written invention exercises. The advantages of using production of art and artwork in the pre-writing process provided a motivational entry point, while also providing a way to develop and elaborate their thoughts, and generate ideas in response to the finished artwork.

This paper focuses on the experimental impact of the *Picturing Writing* program on students' writing in grades 2-4 as well as the more distal impact on district writing measures and standardized tests. Our hypothesis was that student engagement with visual art through discrete instruction and creative expression as a pre-writing activity would enhance writing performance and this growth in writing performance would transfer to writing and reading in multiple contexts.

Methods

Participants

The study was conducted in a diverse Southern California school district encompassing both urban and rural areas during the 2001-2002 school year. The study included 17 classrooms, encompassing grades 2-5, (see Table 1) in four schools with a total of 388 students. However, for technical reasons no writing prompts were administered in fifth grade control classrooms. The data from the experimental fifth grade classrooms was dropped to prevent a strong bias in this measure that is highly correlated with age. As a result, the final sample for the analysis of writing products was 269. The fifth grade classrooms were included in the analysis of standardized test results, yielding an N=342, in this case 46 students did not have scores from both the current and previous years. The full sample was 52% male. Ethnic distribution was 46% Caucasian,

42% Hispanic, 8% African-American, and 4% other. There were no significant group differences in terms of gender and ethnicity distributions.

Measures

Students were assessed in the spring. All students were presented with a visual prompt in the form of a piece of art and asked to write. Each grade level was provided with the same art print, text prompt and teacher administration instructions. While the print varied by grade level, the prompt and administration procedures were constant. Writing about a visual prompt was chosen over the task of having students write about their art work as we wanted to see if the improvement in writing would transfer to a more standardized environment. The use of the same print for each grade level provided a consistency in writing that allowed better comparison of the samples. The visual stimuli also equalized conditions for both treatment and control groups. Students were asked to describe the scene presented and the story it depicted. All students were given time to use a pre-writing scaffold that helped generate connected vocabulary. Students in all classrooms were given 15 minutes for the pre-writing activity and 30 minutes to write their responses. The written products were analyzed in three domains: quantity, quality, and the use of color vocabulary. In other papers, we have discussed the writing samples that were connected to the student-produced artwork.

The length of each writing sample was assessed by counting the number of words. While the length of a sample does not necessarily indicate quality, it is important for a young writer to reach a level of writing fluency and to practice creating a complex text. As a result, length of text becomes an important measure of writing competence. Inter-rater agreement on word counts was .98. All disagreements were resolved by a third rater.

To assess the writing, an analytic rubric was created so that individual traits could be quantified and tracked over time. Some of the traits chosen, vocabulary, coherence, and grammar, were based on work by Calfee and Wilson (2004). To these traits we added verb and adjective use, since young writers tend to use short familiar words and simple sentences. Furthermore, we could better observe the links between the art and the writing through a focused

examination of word choice. We specifically looked at description of color, use of adjectives, and the illustrative verbs. Thus we recorded student's ability to select specific sensory adjectives as well as active verbs overtime. The inter-rater agreement for scoring the samples was .89. While the individual traits are useful for feedback and instructional strategies, a factor analysis found a strong one-factor solution representing the data. We therefore created a single writing score by adding all scores. The reliability of this score was satisfactory α =.90.

The use of color words was used as a proxy for sensitivity to artistic features, albeit a very rudimentary measure. Two measures were used: frequencies of using basic color words i.e. blue, red, and frequencies of using more advanced color words and analogies such as maroon, velvet black.

Statewide standardized testing (Stanford Achievement Test 9th Edition [SAT9]) was also analyzed to examine transfer. The scores for reading and writing are based on the augmented test that included items beyond those of the national sample to fit the California Standards. The reading test included items focused on word analysis and vocabulary development (52%), reading comprehension (34%), and literary response and analysis (14%). The scores for reading and writing are based on the augmented test that included items beyond those of the national sample to fit the California Standards. The reading test included items focused on word analysis and vocabulary development (52%), reading comprehension (34%), and literary response and analysis (14%). The language test includes items addressing vocabulary, semantic and grammatical structures.

Procedure

In the *Picturing Writing* process, the students use visual art as part of their pre-writing. *Picturing Writing* originated in New Hampshire in the mid 1990s at the University of New Hampshire and was the focus of a number of empirical studies (Olshansky, 1990, 1994, 1995, 1998) . The *Picturing Writing* curriculum in this study included two discrete units, *Weather Poetry* and *Time of Day*. In both units, students were given instruction in creating visual art using crayon resist and watercolor. As part of the lesson a rich array of literature was shared with the students. The selection of

literature was based on both the quality of the text and the images. After extensive exposure to the visual and verbal texts students were asked to create their own visual art reflecting the same theme. The students used their own art to brainstorm ideas for their writing using a graphic organizer. Finally, the finished painting was used as a writing prompt. The final product was a multi-page book containing pictures and writing or selections of student poetry and pictures.

The control group used the district standard writing program and materials without the addition of *Picturing Writing* materials or instructional methods. All classrooms in the study and the district as a whole, have the same total instructional time.

Results

Results are presented in two main parts. The first two analyses compare the group that used *Picturing Writing* to a control group. The comparison is made for both qualitative and quantitative writing measures followed by an analysis looking specifically at the use of color words, a specific curricular goal of *Picturing Writing*. In the following section the *Picturing Writing* group is compared with controls for differences in standardized test results in language and reading.

Analyses of Student Writing

An ANOVA was conducted to assess the impact of the *Picturing Writing* program on the quantitative measure of writing length. Adjusted mean results are shown in Table 2. There was no interaction effect between grade level and experimental group. Both main effects were significant. The main effect of grade was significant as expected F (2,266)=25.1, p<.0001, MSE=822.2. Experimental group was also significant F(1,266)=9.4, p<.005, with an effect size d=.37. The effect was especially large in the fourth grade where students in the project wrote on average 50% more than their classmates.

An second ANOVA was conducted to assess the impact of the *Picturing Writing* program on the qualitative measure of writing (combined score). Adjusted mean results are shown in Table 2. Here too there was no interaction effect between grade level and experimental group. Both main effects were significant. The main effect of grade was significant as expected F(2,266)=19.3, p<.0001. MSE=10.1 Experimental group was also significant F(1,266)=9.1, p<.005, with an effect size d=.35. Project students used complex descriptions of colors significantly more than controls F(1,284)=24.0, p<.0001, d=.58.

Analyses of Standardized Test Results

Stanford Achievement Test 9th Edition (SAT9) results in language and reading were analyzed using a two-level mixed linear model. The use of this approach enabled the modeling of the nested structures of students within classrooms that is inherent in quasi-experimental research. Spring Language scores were modeled at the student and teacher level. At the student level, scores were predicted by the previous years' language scores. At the classroom level, program participation was used as well as a random classroom effect. The fixed effect for program participation was significant F(1,321)=4.21, p<.05.

A similar analysis was conducted to examine the impact on standardized reading scores. The effect here was even larger F(1,321)=6.29, p<.05. Figure 1 presents the results converted to mean percentile scores (analyses were conducted using Normal Curve Equivalent Scores [NCE]).

Discussion

Burger and Winner (2000) reviewed a number of studies highlighting the arts as motivational entry points. Following their reasoning, students in the study who wrote about their artwork were more engaged resulting in more writing of higher quality. This increase in engagement transferred to writing in other contexts and even reading tasks. When examining the results, it became apparent that engaging children in the art first had a positive impact on their writing in general and their vocabulary and length of the writing specifically. We hypothesize, based on the interwoven symbols systems described by Dyson (1986), that the concrete cognitive connections made between image and text facilitated the students' writing process. Students were able to maintain this improved style

of writing both when writing about artwork by others as well as textual prompts such as the state writing test.

In writing about art, students participating in the project used significantly larger vocabulary when discussing a painting than did the control group. An example of a robust response is, "The sky looks like dark green army material. The hills look like dark brown chocolate milk" (Eric, 2nd Grade). The student's increased artistic perception, that is the student's ability to perceive the world, was facilitated through the creative process and the aesthetic discussion of artwork. Evidence of the increased perception is shown in the increased specificity of color word choice.

Conclusion

The results of this study point very clearly to an achievement benefit to creating art before engaging in the writing process. As we hypothesized, using an explicit creative process linking art and literacy strengthens claims made by previous researchers. This creative process may provide a non-linguistic compositional tool for the children as some researchers have described in qualitative studies (Smagorinsky, 1997; Smagorinsky & Coppock, 1993, 1994). Students were able to use the art making process as Smagorinsky observed to organize their thinking and work through ideas before committing them to text. This study extends the claims linking art and reading production (Burger & Winner, 2000; Ernst, 1994; Wilhelm, 1995) to include writing and reading. The analyses clearly show that across grades 2-5 students who engage in art making produce longer and higher quality written products. This growth is not limited solely to responding to a given product but actually transfers to the task of describing art created by others. Thus, the benefits of using art first are not limited only to products supported by the art making process. With enough practice, they have a positive impact on the quality and quantity of any written product. The added motivation, attention to detail, and memory placeholder leads to more practice and elaboration.

Implications for the Classroom

Beyond the immediate support for literacy achievement,

this study shows that in carefully planned situations we can, as it were, "have our cake and eat it too". The generalist classroom teacher can spend time creating art in meaningful ways integrating the creative process into the language arts curriculum. As this study shows, the results will actually increase achievement in language arts. This however, cannot happen in a vacuum. Teachers need training, a structure they can use easily, ongoing support, and maybe most importantly a clear sense that the process is leading to better student performance. We can only have our art cake and eat it too only if we provide flexible support for teachers, that is scalability may very well depend on a strong professional staff. As this project extends into the future we intend to look carefully into the sustainability and the kinds of supports needed for it.

In the elementary classrooms today, there is a strong push to achieve academic goals in the three *Rs*, reading, writing and arithmetic. This atmosphere often drives visual arts out of the instructional picture. This study provides evidence that this may be a mistake, since children's growth in writing is nurtured in a rich visual art environment.

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Appendix

Table 1: Participants by Grade

	Number of Teachers (Students)			
	Experimental	Control		
2 nd Grade	4 (71)	3 (55)		
3 rd Grade	1 (13)	1 (17)		
4 th Grade	2 (55)	2 (58)		
5 th Grade*	3 (77)	2 (44)		
Total	9 (139)	8 (130)		

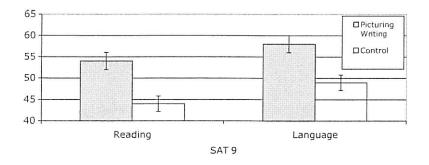
 $Note: {}^*5^{th} grade \ classrooms \ were \ included \ in \ standardized \ test \ analysis \ only.$

Table 2: Writing scores by group and grade

	Picturing Writing Group				Control Group			
Grade	2	3	4	Total	2	3	4	Total
Writing Quality	13.5 (3.3)	15.7 (3.8)	16.0 (2.8)	15.1 (3.5)	12.3 (3.3)	14.5 (1.8)	14.8 (3.4)	13.9 (3.3)
Length of Text	58.3 (22.6)	58.5 (36.2)	83.5 (29.5)	66.8 (33.8)	47.4 (31.8)	47.7 (29.7)	72.7 (25.5)	55.9 (28.0)
Frequency of Color Words	3.8 (3.1)	6.1 (6.8)	6.1 (6.6)	5.3 (5.6)	1.6 (3.3)	4.0 (2.4)	4.0 (3.6)	3.2 (3.4)

Note: all group differences are significant at the .005 level.

Figure 1. Standardized test results



Analytic Writing Rubric

	Coherence	Grammar / Mechanics
1	Unrelated or unintelligible	Unintelligible due to grammar or punctuation
2	Addresses the topic minimally May wander off topic Fragmented expressions of ideas	Simple sentence structure or phrases with many fragments & run-ons Errors (conventions or punctuation) highly evident and interfere with reading
3	Addresses the topic without wavering Provides few pieces of description, elaboration, evidence or support	Simple or repetitive sentences, may include fragments or run-ons
	May construct rambling sentences or listings (without elaboration) Some areas of vagueness or confusion may be present	Some errors in punctuation and grammar, without impeding understanding
4	Addresses the topic without wavering Provides description, elaboration, evidence or support Information or examples maybe in list-like form (no tying together of ideas) Writing is generally understandable and coherent, but lacks complete control. Focus may shift and be somewhat difficult to follow.	Clear sentence sense and variety Few run-ons or fragmented sentences Minimal errors in punctuation
5	Demonstrates ease and facility in expressing ideas. Writing flows smoothly and naturally, and is understandable. Generally focused on the topic, but may digress. Provides description, elaboration, evidence or support. Writer provides overall links, but transitions may not always be smooth; ideas/reasons are clear and logical.	Few run-ons or fragmented sentences Minimal errors in punctuation Some variation in sentence structure, including phrases and clauses.
6	States main topic and supports with details and examples. Shifts in topic are logical and easy to follow. Writer provides overall links or transitions; examples and descriptions are presented logically.	Few if any errors in grammar and punctuation. Utilizes appropriate variety of sentence structures, including phrases and clauses.

Analytic Vocabulary Rubric

	Vocabulary
1	Few words and/or limited to words provided in the prompt Incorrect and/or ineffective language use
2	Simple CVC words and basic Handy words Short "safe" words, commonplace Simplistic and/or imprecise language
3	1-2 syllable words May include compounds and *Anglo-Saxon affixation (prepositions, comparatives: under-, -er, -est) May include descriptive words
4	Substantial evidence of polysyllabic words (including compounds) May include *Anglo-Saxon affixation (prepositions, comparative; under-, -er, -est) Increased preciseness ['friendly' for 'nice']
5	Complex words Latin (& Greek) roots & affixes (prefixes & suffixes)
	Precise and/or rich language No ordinary friend, compassionate
6	Substantial use of complex words Latin & Greek roots and affixes Lexical variety

Note: Most Anglo-Saxon words can stand-alone and be affixed Affixes are often preposition: over-, under-, in-, for Common suffixes include: -ed, -er, -ing, -ly, -hood, ness

Calfee and Wilson (2004, p. 591)

Guy Trainin is an assistant professor of Literacy at the University of Nebraska-Lincoln. He focuses his research in the areas of reading acquisition, the intersection of art and literacy, and field research methods. He is co-founder and co-director of The Great Plains Institute for Reading and Writing at UNL.

Nancy L. Andrzejczak is currently a third year doctoral student at University of California, Riverside. Her research interests include the impact of art on literacy acquisition, teaching behavior and practices, and policies affecting arts education. She is the 2005 California Art Education Association, State Art Educator of the Year.

Monique Poldberg is a second grade teacher at Butterfield Elementary School in Lake Elsinore, CA. She is a co-director of Project RAISE. She is currently researching the impact of multiple art forms on language acquisition.