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ABSTRACT

In advocating written literacy through visual literacy, this paper presents an overview of supporting theory and evidence and demonstrates practical application through visual compositions. The research reported in the first section of the paper includes the general theoretical stance of writing-as-process educators, who believe that the acquisition of language is a developmental process, embarked on because of the innate propensity of individuals to make sense of the world to themselves and others. The second theoretical stance--included in the second section--is that of educators investigating visual literacy, or the apparent similarity between certain visual and verbal behaviors. The third and fourth sections briefly overview current research in perception, imagery, and cerebral hemisphere asymmetry and their link to composition. A final section explains how pictures and visual compositions can be used in the classroom to aid verbal literacy development. (CRH)

IMPROVING WRITTEN LITERACY THROUGH VISUAL LITERACY

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Improving Written Literacy Through Visual Literacy

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INTRODUCTION:

The visual abilities of students have been exploited in formal education settings probably since the first schools began; however, since the turn of the twentieth century, there has been a proliferation of technological devices for conveying information visually. In today's schools students are not only the recipients of information via various media, but they create advertising campaigns, produce magazines, radio shows, television shows and films, slide projectors, tape recorders and computers with considerable competence. Educators have frequently observed a favorable impact of visual study and production on the composing abilities of students. (Cameron & Plattor, 1971; Fransecky & Ferguson, 1973; Cameron 1980; Colling et al 1980; Plattor, 1983). These observations have led to some speculation about the nature of a relationship between visual abilities and written composition and its implications for teaching practice.

> If visual stimulation could facilitate linguistic stimulation by eliciting a written response to match visual meaning, then those students who are generally weak in Composition could be aided by pictorial presentation. (Sinatra, 1973)

The above speculation serves as a point of departure for this article. In it we will examine theory and some evidence that certain visual activities can assist in the development of verbal written abilities. We will also examine a practical application that has shown to be effective in the classroom.

THEORY AND EVIDENCE: AN OVERVIEW

Two groups in particular have given impetus to the development of theory regarding the relationship: the "writing as process" group of language educators and psycholinguists and the Visual Languaging group of the visual literacy movement.

The writing process impetus:

The general theoretical stance of this group is that the acquisition of language is a process - developmental (according to Piagetian or Brunerian conceptualizations) in nature and embarked on because of the innate propensity of the individual to make sense of the world to himself and to others. (e.g. Britton, 1970: Smith, 1975) Fundamental to this viewpoint is the notion that language acquisition is as much a function of manipulation (writing, speaking, producing) as it is of perception (reading, listening or viewing of language or real experiences that give rise to it). The concept of writing or composing as a process has significantly altered the way language educators look at language acquisition and, hence, literacy. (1)

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1 The Concise Oxford Dictionary defines literacy as "... the ability to read and write". (p.708) which approximates the French "alphabetization". The language as process viewpoint has lent further precision to such a generalized statement. A good example of this is Doughty, Pearce & Thornton's definition (1975)."Literacy is"... the ability to draw upon a wide experience of thelanguage system in order to meet the linguistic needs of a particular occasion for using language." (p. 112): It assumes that this ability is acquired over time (developmental) and through experience in attempting to use the language system in a variety of contexts (process). This view of literacy is adopted in the article.

Verbal (written) literacy is now seen as the developed abilities of writers to describe and assess the context in which the writing will be read; and to use the written language strategies and conventions, selected from a whole range of possibilities, that are appropriate for the context. Written composition is seen as a process in which writers acquire, over time, ever increasing sophistication in describing and assessing audiences (readers) and in selecting the necessary written strategies to communicate effectively with those audiences. Further, the production of each piece of writing is also viewed as a process the writer follows in discovering the intended message, in shaping or framing it in terms of a perceived audience, and in using the language strategies and conventions appropriate to that audience.

Two approaches to the description of the writing process have been elaborated in the literature:

1. an approach which views the writer as operating in three distinct modes vis-a-vis his/her sense of audience (e.g. Moffett, 1968 Britton, 1970; Emig, 1971).
2. an approach which attempts to describe the different kinds of activity undertaken by the writer (preparation, rehearsal, revision) in the production of a piece of writing. (e.g. Murray, 1968; Graves, 1975; Flower, 1979; Bracewell Frederiksen and Frederiksen, 1982). Bracewell, Frederiksen and Frederiksen,1982).

Of particular importance to this study is a notion

emerging from the literature that there may be a visual dimension to the process of composition. Murray's 1978 description labels the three stages of the composing process: prevision, vision, revision. The choice of terminology to describe the process is not accidental. Many writers in describing the thinking processes related to writing emphasize the role of visual. Ricco and Claggett (1981) provide us with the following examples from the writings of such diverse authors as Albert Einstein and Sinclair Lewis as evidence of this.

> The psychical entities which seem to serve as elements of thought are certain signs and more or less clear images which can be 'voluntarily' reproduced and combined... This combinatory play seems to be the essential feature in productive thought - before there is any connection with logical construction in words or other kinds of signs which can be communicated to others.
> The above mentioned elements are, in my case, of visual and some of muscular type. Conventional words....have to be sought for laboriously only in a secondary stage, when the above mentioned associative play is sufficiently established and can be reproduced at will. (Einstein in Ricco, Claggett, p. 14)

> One thing I'm sure of. All my seven Marian books and my three science fiction began with seeing pictures in my head. Or first they were not a story, just pictures... (Lewis in Ricco and Claggett, p. 11-12,)

Blake (1976) also remarks on the strong effect of the visual on a variety of reknowned writers: Godwin, Schiller, Bradbury, Ciardi, Didion.

Such a theoretical orientation has done much to

encourage language educators to speculate on potential relationships between visual abilities and verbal literacy. As yet, however, relatively little in the way of formal empirical testing to clearly establish the connection and to explain its nature has been forthcoming from this group.

The 'Visual Literacy' Impetus

> Visual Literacy is a term coined to describe a variety of theoretical constructs and practical considerations relating to communicating with visual signs. These visual signs include still photographs, graphic images, motion pictures, television, American sign language, Blissymbolics, and intentional gesturing. (Pett and DeSantis, 1981)

In the vanguard of this newly-emerging field of study are a group of educators investigating the apparent similarity between certain visual behaviors and verbal behaviors (e.g. Debes, 1972). For these educators, the concept of Visual Literacy is the ability of the individual to draw upon a wide experience with the visual language system in order to compose visual statements (messages) and to critically interpret the visual communication of others. In a manner similar to the writing process group, they see visual composition as a process in which producers acquire, over time, ever increasing sophistication in describing and assessing audiences (viewers and listeners) and in selecting the necessary visual (and audio) strategies to communicate effectively with those audiences (Fransecky and Ferguson,

1973). Further, they have developed a descriptive terminology for visual language that is remarkably similar to the terminology that describes verbal written composition.

If one considers that the process of acquiring visual composing and comprehension abilities is remarkably similar to the process of acquiring verbal composing (and comprehension) abilities, then it is a short conceptual leap to the consideration that acquisition of visual languaging abilities affects the acquisition of verbal language. Debes (1975) suggested that this was the case. He hypothesized that visual literacy abilities which young children develop through observation of visual languaging via television could be exploited in schools to assist in the development of verbal languaging strategies. This hypothesis was based, in part, on the reported success of programs and courses in visual communications in a variety of formal education settings in North America. Programs such as "The Milford Project" (Fransecky and Ferguson, 1973) "Project Viewpoint" (Miller, 1976); "Media Now" (Curtis, 1976); "Integrated visual literacy at The Harley School" (Lasser & DeSantis, 1976) claim positive effects of visual communication activities on the language development of pupils/ students. Debes' theoretical position was also supported by emerging results of research into perception imagery and cerebral hemisphere assymetry.

Perception, Imagery & Cerebral Hemisphere Assymetry

The general orienfation of information processing theory spurred research into visual perception which tended to confirm the existence of at least two kinds of processing undertaken by human beings parallel processing (e.g. visuo-spatial) (e.g. Neisser, 1967) and serial processing (e.g. verbal) (Haber, 1969). Since the two kinds of processing are part of a larger integrated system (the human brain), it appears likely that one kind of processing influences (augments or degrades) the other.

Research into the activities of the visuospatial processing system, particularly the memory dimension of it (called "imagery" in the literature) has generated considerable evidence that, in certain instances, visuospatial processing enhances verbal performance, (e.g. Paivio, 1980; Pressley, 1977).

Cerebral hemisphere assymetry research has attempted to explain the mechanisms of visuospatial and verbal processing in terms of the organization of the brain itself an organ with two halves, - each half being primarily responsible for certain kinds of processing activity. i.e. the left hemisphere is specialized for an analytic, digital or serial kind of processing and the right brain for a holistic, Gestalt or parallel kind of processing. (e.g. Glass et al, 1979; Wilkins & Moscovitch, 1979; Hellige, 1980).

Another associated hypothesis is that in the intact brain, the two cerebral hemispheres must function inter-

dependently as part of a larger unified information processing system. (e.g. Kimura, 1973; Bryden and Allard, 1976; Hellige, 1979.)

...and Composition:

Recently, attempts have been made to link the theory and findings of visual perception, imagery and cerebral hemisphere assymetry to theory about the influence of the visual on writing.

Blake (1979) hypothesized two stages in the composing process that appear to correspond with two modes of mental activity: the stage of writing a first draft involves the unconscious, personal, irrational, intuitive mode of processing (right hemisphere); the stage of revising a first draft involves conscious, impersonal, rational, intellectual mode of processing;

Rachelson (1977) suggested that hypothesis generation is initially synthetic, imaginative, timeless, intuitive, metaphoric in nature - or a right brain activity;

Emig (1978) hypothesized that different modes of discourse might invoke different modes of hemispheric activity: i.e. that "... argument would be predominantly left hemisphere, poetry or narrative, right." (p.70)

Kraft et al (1980) recorded individual EEG's of eighteen children (ages 6-8) engaged in three types of tests: watching visuospatial transformation of material illustrating Piaget's conservation paradigm; using oral language to explain

what happened during the transformation; reading about what happened; answering questions about the reading passage. Greater right hemisphere activity was registered in the watching and during the silent reading of the passage; greater left hemisphere activity occurred in the oral talk and in answering the questions based on the reading passage.

Glassner (1980) undertook to investigate the possibility of writing as an integrator of hemispheric activities. In particular, he hypothesized that "reflexive" composing (Emig, 1971) - i.e. composing that is more tentative, personal, exploratory - (requiring considerable pre-organization before being publicly put to paper) - would invoke both right and left hemisphere activity; whereas "extensive" composing i.e. composing that was more assured, impersonal, reportorial - would invoke left hemisphere activity only. He designed an experiment in which students were given two different writing assignments while being monitored by an electroencelograph (EEG) machine. Although no direct relationship was discovered between the tasks themselves and shifts in hemispheric activation, observations of the thinking processes used by students (obtained through interview and examination of the students' worksheets) in generating the writing enabled the researchers to predict the EEG readings in fifty-two of the sixty cases.

The results seemed to suggest that "reflexive" and "extensive" composing are not specific to the kind of discourse, but, rather to the kind of initial thinking that produces the discourse. It appeared that if the students needed to initially visualize experience in order to structure and make sense of it, then the activity initially was largely right hemisphere; if experience (in this case, narrative of an emotionally-charged personal experience) was already structured or made sense of and the writer merely had to choose the appropriate words, phraseology etc. to recount the experience, the activity was initially and largely left hemisphere.

Ricco and Claggett (1980) suggested that:

> The composing process as a complex symbolic activity necessitates a kind of dialogue between whole and parts, between image and sequence, between configuration and specifics, between initially vague global idea and gradually emerging parts. (p.2)

The "whole" is generated by imagistic thought, a principal function of the right hemisphere of the brain and the "parts" are ordered by sequential thought, a principal function of the left hemisphere. Furthermore, writing requires ... not only the specialized talents of both hemispheres, but a shifting back and forth from a whole to its constantly emerging parts. Ricco & Claggett reason, therefore, that visual strategies which involve holistic processing play a significant role in assisting the development of verbal composing abilities. They have

designed a variety of strategies to assist students in developing right hemisphere processes. As yet, however, they have not supplied the direct empirical evidence that the use of these strategies does indeed result in the improvement of verbal composing abilities.

Sinatra (e.g. 1973, 1975, 1984, 1983) had developed a very similar model. Essentially he views the relationship between visual ability (literacy) and the verbal composing process as follows:

1. visual literacy activities engage, largely, right hemisphere activity or processing: i.e. holistic, analogic, parallel;

2. such activity can aid the general, overall organization of verbal language: i.e. the global, holistic apprehension of the message (to be) generated;

3. this leads the individual to be able to organize analytically the pictorial details that devolve from the whole (left hemisphere activity) e.g. from paragraph development and organization to sentences and words.

A PRACTICAL APPLICATION: VISUAL COMPOSITIONS

One efficacious and practical way to use the power of visual literacy in the classroom is to use pictures and visual compositions to aid verbal literacy development. Pictures in the form of photographs or slides also represent direct experience and in that sense they can be viewed as being analogous to an actual event. The power in the use of pictures is in the fact that they bring the concrete world to the classroom and allow students to form immediate knowledge bonds with the viewed replicas.

In a number of sources, Sinatra (1980, 1981, 1983) has advocated the classroom use of visual compositions to help students compose coherent, unified pieces of written discourse that serve to report, record, inform, and persuade. Most important, a visual composition involves the use of more than a single picture. It is a collection of pictures that suggests a unified theme. Because of the interrelated relationship of the pictures, students learn the important visual/verbal concept that as each picture contributes a thread of meaning to the visual composition, each sentence they compose should relate to the central idea they evolved for the visual composition topic .

Secondly, the content plus the arrangement of the visual composition allows students, expecially those who have difficulty in conceptualization of theme and those that are considered language deficient, to write about a broad range of topics in many informational genres. For instance, students who see a series of slides showing how tires are used in the environment are encouraged to write a composition of explanation or generalization about the many and diverse uses of tires

while students who see a slide-story showing the individual efforts of one fireman to save a burning church are motivated to write a narrative account of how the fireman ascended a ladder, tightroped across a roof breaking windows to release smoke, and then descended the ladder besmirched with soot.

Visual compositions can be prepared in a number of ways to aid the conceptual and literacy development of all levels of students. Teachers can photograph their own visual stories or can arrange any combination of photo essays from the storehouse of pictures and slides that are found in the family's photo albums (Sinatra, 1980). If prepared by the teacher, it is best to show or project at least two complete showings of the visual story. During the first visual presentation, students sense the contribution of each picture to the overall theme. Because they gain the holistic understanding of the visually presented theme, they can be asked to write their thematic sentence or main idea sentence at this time. During the second viewing, students can write individual sentences based on ideas presented in singular pictures. Again, the important concept to impart is that the individual sentences should relate to the overall theme.

Secondly, teachers with only one or a limited supply of cameras can plan class trips or outings and in conjunction with students can photograph events and scenes that lend themselves to a common theme. This activity entails discussion, preplanning, and visualization: all essential ingredients of composing. For instance, one graduate teacher recently took her sixth-grade class of English as a Second

Language students on the traditional outing to the city zoo. With only two rolls of film (72 exposures), they arranged seven different visual compositions when the pictures were returned from processing. They planned together simple visual compositions in a narrative format which photographically recorded the discrete events of the day, and more complicated ones, which asked students to write about specific animals in their environments and to tell an adaptive feature of each animal which enables it to survive well in its environment. So, in the latter photo essay, a camel was not shown behind a cage but was seen in a desert-like plain.

Once each separate visual composition was displayed before the class, each student was asked to write a composition based on the way that the visual composition was organized. While Margaret's composition ran some full three pages, only the introductory, first, third, and concluding paragraphs are printed as written to serve an example of the technique:

Special Features of Zoo Animals

by Margaret

Each animal that I observed at the zoo had very special features all their own. These special features are part of what enables the creatures to live in their own environment. When animals are brought to a zoo - the zoo arranges to have them live in similar conditions to that of their natural habitats.

A seal is a mammal. It lives in the sea or ocean. A seal's body is shaped like a torpedo. It spends most of its time in water and are excellent swimmers. When a female gives birth, she does it on land. The seal uses its brown fins for swimming. Most of the seals eat fish and squid. Their body has a very thick fur to keep them warm in cold areas.

> An elephant is the largest animal that lives on land. It has a tremendous body that is gray, with 4 gigantic legs, 2 leaf-like ears and a trunk that looks like a hose. An elephant uses its trunk to carry food and water to its mouth. It can even give itself a shower by shooting a stream of water through its trunk. It weighs about a few tons. It lives in warm places. Elephants eat grass, leaves, small branches and bark. The zoo provides them with conditions the same as their natural habitat.
>
> These and many more creatures I observed at the zoo on one of our school field trips.

The third way visual compositions can be prepared is again by students under the direction of the teacher. Single pictures and picture sequences can be cut out of newspapers, brochures, magazines, and old books to provide stimulating illustrations for visual stories. The key is arrangement and rearrangement of the pictures, however, in the way that they relate to a central theme. Elsewhere, Sinatra has shown that there are at least seven visual composition arrangements that can be arranged to influence the writing and understanding of corresponding styles of written discourse (1983).

The final, and possibly most intellectually rewarding way that visual compositions can be prepared is when they are photographed by individual students alone as they compose through the viewfinder. This is not as simple as it appears to those who know the power and limitations of the camera well. Rather than giving students cameras and turning them loose to shoot indiscriminate subjects and events, they must be trained to compose a theme beforehand. This means they have to visualize the whole effect of their visual story before they start shooting the individual parts. This mental activity will help them when they come to the task of writing the composition based on the

organization and content of the visual composition.

When students are shown how to compose through the nonverbal, visual eye of the camera it seems that their overall thinking and literacy levels are heightened. This occurs because composers of visual compositions can be compared to writers in their roles as transmitters of information. The visual composer learns to combine objects, space, light, angle, and mood to suggest a particular message or effect as the writer needs to combine words, sentences, and paragraphs to obtain a style. Furthermore, just as a writer selects words that have objective and emotional connotations, the picture-maker conveys ways that work on many levels to suggest humor, irony, or symbolic commentary (Eckhardt, 1977). Once students themselves are shown how to develop a visual theme or photo essay in a sequence of pictures, they learn how to use imagery to plan the parameters of a shot before its actual occurrence, and they learn how to use design and movement to establish visual continuity (Kaplan, 1976). The visual composer will also learn that the world often looks a little different through the view-finder. The most commonplace object can assume a delightful countenance if photographed under the right conditions and if juxtaposed with the right associative details. Those who start squinting at details of their environment are almost always delighted with the exquisite color, shades and textures that materialize before them and suddenly begin to look at the world with an entirely fresh and dynamic point-of-view (Cameron, 1980).

CONCLUSION:

In our teaching of the language arts, we continue to cultivate verbal growth and weed out verbal deficiencies; but we do not particularly cultivate or reward the nonverbal mode. We praise and reward the inventors, the artists, the composers, and the architects long after their schooling has ended. We may not reward them during their schooling years, nor do we particularly esteem their non-verbal strengths, which can be exhibited in a number of ways in and out of the classroom. Symmes and Rapoport (1972) give an interesting account of 54 high-IQ. youngsters, all of whom showed superior ability for the visuospatial mode. Although these youngsters had demonstrated their skills in model building and visual classification early in life, they were failing in school because they lacked reading and writing skills.

Such is the prestige of written literacy. If children do not attain it early and at the same rate as their peers, we may label them disabled and subject them to analytic, parts-specific remediation. We thus curtail their powers of nonverbal and analogic thinking and minimize opportunities to cultivate the creative mode in which they may excel.

Our educational horizons should be broadened to readmit the nonverbal mode of thought that is an essential part of youngsters' lives. We should re-establish the influential role of the right hemisphere in creativity and in language development. This article has shown that there are theoretical and empirical grounds for doing so and has provided one important instance of how this may be done.

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