

Art and Thinking

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How are we teaching our students to think? How can the arts help? This essay looks at the relationship between visual art activities and various aspects of cognitive development in children. While visual art contributes to education by teaching about history and cultures, the human spirit and the human condition, respect and tolerance for others, and so on, the following focuses only on the ways art behaviors cause students to exercise their capacity for *thought*.

Cohen and Gainer (1995) point out that creating visual art requires students to engage in a number of thinking skills that are valued across the curriculum. First, the universal, innate, human compulsion to make marks and name them, is crucial to our ability to understand the world around us. "Thinking individuals, children or adults, constantly create symbols of their experiences in order to think about them. Symbolization is necessary for thought to take place" (p. 67). Drawing is the child's first written symbol system and creating it sets the stage for the child's ability to read and understand other abstract symbol systems (letters, numbers, musical notations, etc.).

Secondly, art activities make possible the transformation of knowledge into another, tangible form. Goldberg (2001), considers transformation "a key to knowledge construction and acquisition" (p. 3). Encountering and even remembering information does not necessarily make it *known* to the individual. Knowledge is not absorbed; it must be constructed by the learner. Transformation, especially through active and holistic engagements, allows students to process information, re-conceptualize it, and make it manifest in another form. That is, express it in a way that has personal meaning and in a physical form that can be considered and reflected upon.

Third, quality perception is crucial to quality thinking. Our senses serve as the bridge between ourselves and the outside world. Everything that we know about the world comes into us through our senses. Art activities routinely involve exercising the senses followed by careful reflection of the observational, tactile, and auditory data that is collected. Simply put, visual art activities can cultivate the senses; such activities help students learn *how* to look (and, to a lesser extent, feel, smell, listen, and taste).

Fourth, art activities require students to organize their thoughts and actions. Priorities must be identified, ideas and events may be sequenced, and processes may be defined. Patterns may be identified and represented. Images may be compared, contrasted, and classified. All of these activities nourish organizational thinking which is necessary across the curriculum.

Fifth, artistic activity encourages the use of metaphoric thinking, a powerful tool in all areas of learning. Metaphors enable students to connect new knowledge to prior knowledge by identifying relationships and expressing them. Understanding is enhanced when the learner creates, reflects upon, and revises their own metaphoric connections.

This list identifying the relationship between the art and these five facets of thinking is certainly not all inclusive. In their 1988 book, *Dimensions of Thinking*, Marzano and his colleagues identified and defined 21 "core thinking skills." These thinking skills are widely accepted and addressed in classrooms across the country. In the chart that follows, each of the core thinking skills is matched with an example of a visual art activity that demonstrates the potential to nurture and enhance that particular thinking skill.

Dimensions of Thinking: Core Thinking Skills and Cognition in Visual Art

Core Thinking Skill	Definition	Examples in Art
Focusing Skills <ul style="list-style-type: none"> · Defining problems · Setting goals 	Attending to selected pieces of information and ignoring others. <ul style="list-style-type: none"> · Clarifying needs, discrepancies · Establishing direction & purpose 	<ul style="list-style-type: none"> · Defining a subject that will convey meaning in a work of art. · Creating preliminary sketches of an idea for a work of art.
Information Gathering Skills <ul style="list-style-type: none"> · Observing/perceiving · Formulating questions 	Bringing to consciousness relevant data needed for cognitive processing. <ul style="list-style-type: none"> · Obtaining info through senses · Seeking info through inquiry 	<ul style="list-style-type: none"> · Observational drawing of anything. · Experimenting with a glaze combination.
Remembering Skills <ul style="list-style-type: none"> · Encoding · Recalling 	Storing and retrieving information. <ul style="list-style-type: none"> · Storing info in long term mem. · Retrieving info from long term m. 	<ul style="list-style-type: none"> · Student generated graphic explaining a technique. · Recalling a visual memory for a work of art.
Organizing Skills <ul style="list-style-type: none"> · Comparing · Classifying · Ordering · Representing 	Arranging information so it can be used more effectively. <ul style="list-style-type: none"> · Noting similarities & differences · Grouping things due to attributes · Sequencing per a criterion · Changing the form of info. 	<ul style="list-style-type: none"> · Comparing and contrasting art within and across styles & times. · Creating unity and variety of line, shape, color, or texture. · Drawing an experience in story board form.
Analyzing Skills <ul style="list-style-type: none"> · Identifying attributes and components · Identifying relationships and patterns · Identifying main ideas · Identifying errors 	Clarifying existing information by examining parts and relationships <ul style="list-style-type: none"> · Determining characteristics or parts of something · Recognizing ways elements are related · Identifying the central element · Recognizing mistakes & correcting 	<ul style="list-style-type: none"> · Discussing the elements of art. · Discussing the principles of art. · Reading a work of art using Feldman's close viewing process. · Differentiating between artistic style and proper technique. (As with perspective or watercolor)
Generating Skills <ul style="list-style-type: none"> · Inferring · Predicting · Elaborating 	Producing new information, meaning, or ideas. <ul style="list-style-type: none"> · Going beyond available info · Anticipating an event or outcome · Add info, examples, or details 	<ul style="list-style-type: none"> · Drawing negative space to reveal objects in a still life. · Predict the outcome of mixing 2 colors in a painting. · Creating visual analogies & metaphors. Adding details.

Integrating Skills · Summarizing · Restructuring	Connecting or combining information · Combining info. cohesively · Changing structure of knowledge	· Creating an abstracted image from life. · Synthesizing dissimilar entities in a visual image.
Evaluating Skills · Establishing criteria · Verifying	Assessing the reasonableness and quality of ideas. · Setting standards for judgements · Confirming the accuracy of claims	· Defending one's opinion of a particular work of art. · Determining the communicative effectiveness of one's own work.

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References

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