The ARTS and the CREATION of MIND

ELLIOT W. EISNER

YALE UNIVERSITY PRESS/NEW HAVEN & LONDON
For my grandsons, Ari, Seth, and Drew. “MAY THE FORCE BE WITH YOU.”
CONTENTS

Acknowledgments ix

Introduction xi

1 The Role of the Arts in Transforming Consciousness 1

2 Visions and Versions of Arts Education 25

3 Teaching the Visual Arts 46

4 What the Arts Teach and How It Shows 70

5 Describing Learning in the Visual Arts 93

6 The Centrality of Curriculum and the Function of Standards 148

7 The Educational Uses of Assessment and Evaluation in the Arts 178

8 What Education Can Learn from the Arts 196

9 An Agenda for Research in Arts Education 209

10 Summary and Significance 230

Notes 243

Index 254
ACKNOWLEDGMENTS

My interest in the visual arts began in elementary school. In fact the visual arts were a source of salvation for me at both the elementary and secondary school levels; I might not have got through without them. Upon graduating from my secondary school in Chicago, I enrolled as a student in the School of the Art Institute of Chicago and later in the Institute of Design of the Illinois Institute of Technology. After completing a master’s degree at the Institute of Design of the Illinois Institute of Technology, I taught art in the Chicago Public Schools and later at the Laboratory School of the University of Chicago. I have worked in the field of art education for over thirty-five years. Much of what I have to say about the arts in education has been informed by my experience as a painter and as a teacher of art.

In the preparation of this book, as anyone knows who has written one, debts are owed to many people. Some are owed to scholars whose work has influenced my thinking, including the values I embrace. Rudolf Arnheim, John Dewey, Nelson Goodman, and Susanne Langer, from the philosophic arena, are among those to whom I owe my deepest philosophical debts.

In the arts in education, among many others I am indebted to Manual Barkan, David Ecker, Edmund Feldman, Jerome Hausman, and Ellen Winner.

In the field of education I am indebted to Mike Atkin, Tom Barone, Larry Cuban, Stephen Dobbs, Howard Gardner, Maxine Greene, Philip Jackson, Ray McDermott, and Alan Peshkin.
Among the most important of those on whom I have depended and tested ideas, and with whom I have consulted, are my former students. Over many years, students come to shape your life in a multitude of ways. They challenge, cajole, deflate, and encourage. I am surely indebted to those I have had the privilege of teaching.

I also wish to thank Rebecca Chan and Mary Li, from Macao and Hong Kong, respectively, for their assistance in securing for me student work done in Rebecca’s class. She is an extraordinary teacher of art, and when I had the opportunity to obtain her students’ work, I took advantage of the opportunity with alacrity.

Several colleagues read and commented on the manuscript in draft form. It is better because of their advice. I want to thank Hilary Austen, Doug Boughton, Kerry Freedman, and Mary Ann Stankiewicz for their helpful advice.

I especially want to express my appreciation to Shifra Schonmann for her careful and helpful constructive review of the entire manuscript. Her assistance has been invaluable.

Finally, there are two others for whom my gratitude is boundless. The first is Tanya Chamberlain, my secretary, friend, and utility infielder at Stanford. This book simply would not have been written without her care and constructive assistance in finding just the right material for me, often before I knew I needed it. She provided what I needed in countless ways.

To my wife, Ellie, I express my deepest gratitude. She knew when to afford me space, when to allow me to work on the dining room table rather than in my study, and when to turn up the heat so that I maintained the focus I needed to write coherent prose. I owe her more than I can say.
The Arts and the Creation of Mind situates the arts in our schools and examines how they contribute to the growth of mind. Traditional views of cognition and the implications of these views for the goals and content of education have put the arts at the rim, rather than at the core, of education. Schools see their mission, at least in part, as promoting the development of the intellect. "Hard" subjects such as mathematics and science are regarded as primary resources for that development, and the processes of reading, writing, and computing are believed to be the best means for cultivating the mind. We want, especially in America today, a tough curriculum, something rigorous, a curriculum that challenges students to think and whose effects are visible in higher test scores. At best the arts are considered a minor part of this project.

Although the arts in American schools are theoretically among the so-called core subjects, and although school districts and indeed the federal government identify them as such, there is a huge ambivalence about their position in the curriculum. No one wants to be regarded as a philistine. Yet at the same time privilege of place is generally assigned to other subject areas. Despite the recent hoopla about their contributions to academic performance, the arts are regarded as nice but not necessary.

One aim of The Arts and the Creation of Mind is to dispel the idea that the arts are somehow intellectually undemanding, emotive rather than reflective operations done with the hand somehow unattached to the head. In the following pages I advance quite a different view. I argue that many of the most complex and subtle
forms of thinking take place when students have an opportunity either to work meaningfully on the creation of images—whether visual, choreographic, musical, literary, or poetic—or to scrutinize them appreciatively. To be able to create a form of experience that can be regarded as aesthetic requires a mind that animates our imaginative capacities and that promotes our ability to undergo emotionally pervaded experience. Perception is, in the end, a cognitive event. What we see is not simply a function of what we take from the world, but what we make of it.

The world that students now live in and that they will enter as adults is riddled with ambiguities, uncertainties, the need to exercise judgment in the absence of rule, and the press of the feelingful as a source of information for making difficult choices. Whether work in the arts has consequences that extend to all aspects of the world cannot now be determined with any degree of confidence. What can be determined with a high degree of confidence is that work in the arts evokes, refines, and develops thinking in the arts. We might cautiously reason that meaningful experience in the arts might have some carryover to domains related to the sensory qualities in which the arts participate.

But carryover to the extra-artistic or extra-aesthetic aspects of life is not, in my view, the primary justification for the arts in our schools. The arts have distinctive contributions to make. I count among them the development of the thinking skills in the context of an art form, the expression and communication of distinctive forms of meaning, meaning that only artistically crafted forms can convey, and the ability to undergo forms of experience that are at once moving and touching, experiences of a consummatory nature, experiences that are treasured for their intrinsic value. These are experiences that can be secured when one attends to the world with an aesthetic frame of reference and interacts with forms that make such experience possible.

But the arts do more than serve the needs of individuals, as important as such a contribution might be. The arts, I argue, can serve as models of what educational aspiration and practice might be at its very best. To be able to think about teaching as an artful undertaking, to conceive of learning as having aesthetic features,
to regard the design of an educational environment as an artistic task—these ways of thinking about some of the commonplaces of education could have profound consequences for redesigning the practice of teaching and reconceiving the context in which teaching occurs.

We have had a tendency, especially in the United States, to embrace a form of technical rationality designed to assuage our anxiety about the quality of our schools. The tack that we have taken is to specify in no uncertain terms our expectations, to prescribe content and procedures related to them—“alignment” it is called—and then to monitor and to measure the consequences. The tacit view is to create an efficient system, a system that will help us achieve, without surprise or eventfulness, the aims that we seek.

The arts, in contrast, have little room on their agenda for efficiency, at least as a high-level value. Efficiency is largely a virtue for the tasks we don’t like to do; few of us like to eat a great meal efficiently or to participate in a wonderful conversation efficiently, or indeed to make love efficiently. What we enjoy the most we linger over. A school system designed with an overriding commitment to efficiency may produce outcomes that have little enduring quality. Children, like the rest of us, seldom voluntarily pursue activities for which they receive little or no satisfaction. Experiencing the aesthetic in the context of intellectual and artistic work is a source of pleasure that predicts best what students are likely to do when they can do whatever they would like to do.

As you read this book, you will find that it often dances between references to art, by which I mean the visual arts, and references to the arts, by which I mean all the arts. I am afraid that consulting the context is the only way to resolve this potential ambiguity. I hope that this acknowledged inconsistency will cause no consternation.

Another issue that should be mentioned has to do with my conviction that not all works of art are created equal. There are human achievements in every culture on this earth that represent the quintessential attainments of the human imagination, works of such stunning accomplishment that they alter the ways in which those who see or hear or read them look upon the world.
At the same time, I want to acknowledge that any practice whatsoever can have aesthetic or artistic qualities. This includes three-year-olds building castles in the sand as well as surgeons engaged in a life-sustaining operation. What is aesthetic depends at least in part on the way some feature of the phenomenal world is addressed. Castles in the sand may be among the beginning efforts. It falls to those of us in education to try to design the situations in which children’s efforts become increasingly more sophisticated, sensitive, imaginative, and skilled. This is no small task, and no minor achievement when realized.
To understand the role of the arts in transforming consciousness we must start with the biological features of the human organism, for it is these features that make it possible for us humans to establish contact with the environment in and through which we live. That environment is, in its most fundamental state, a qualititative one made up of sights and sounds, tastes and smells that can be experienced through our sensory system. Although the world of the newborn may indeed be the blooming, buzzing confusion that William James once described, it is, even in its apparently chaotic condition, an empirical environment, an environment that all humans, even newborns, can experience.¹

Experiencing the environment is, of course, a process that continues throughout life; it’s the very stuff of life. It is a process that is shaped by culture, influenced by language, impacted by beliefs, affected by values, and moderated by the distinctive features of that part of ourselves we sometimes describe as our individuality. We humans give simultaneously both a personal and a cultural imprint to what we experience; the relation between the two is inextricable. But despite these mediating factors, factors that personalize and filter experience, our initial contact with the empirical world is dependent upon our biologically evolved sensory system. That
system, an extension of our nervous system, is, as Susanne Langer says, “the organ of the mind.” Listen as Susanne Langer, in her classic *Philosophy in a New Key*, describes the connection between the sensory system and the mind:

> The nervous system is the organ of the mind; its center is the brain, its extremities the sense-organs; and any characteristic function it may possess must govern the work of all of its parts. In other words, the activity of our senses is “mental” not only when it reaches the brain, but in its very inception, whenever the alien world outside impinges on the furthest and smallest receptor. All sensitivity bears the stamp of mentality. “Seeing,” for instance, is not a passive process, by which meaningless impressions are stored up for the use of an organizing mind, which constructs forms out of these amorphous data to suit its own purposes. “Seeing” is itself a process of formulation; our understanding of the visible world begins in the eyes.²

The senses are our first avenues to consciousness. Without an intact sensory system we would be unaware of the qualities in the environment to which we now respond. That absence of consciousness would render us incapable of distinguishing friend from foe, of nourishing ourselves, or of communicating with others.

The ability to experience the qualitative world we inhabit is initially reflexive in character; we are biologically designed to suckle, to respond to temperature, to be sated with milk. Our biological system is designed to enable us to survive—with the help of others.³ But we also learn. We learn to see, to hear, to discern the qualitative complexities of what we taste and touch. We learn to differentiate and discriminate, to recognize and to recall. What first was a reflex response, a function of instinct, becomes a gradual search for stimulation, differentiation, exploration, and eventually for meaning. Our sensory system becomes a means through which we pursue our own development. But the sensory system does not work alone; it requires for its development the tools of culture: language, the arts, science, values, and the like. With the aid of culture we learn how to create ourselves.

The term *culture* is said to have hundreds of meanings. Two are particularly relevant to education, one anthropological, the other
biological. A culture in the anthropological sense is a shared way of life. But the term *culture* in the biological sense refers to a medium for growing things. Schools, I believe, like the larger society of which they are a part, function as cultures in both senses of the term. They make possible a shared way of life, a sense of belonging and community, and they are a medium for growing things, in this case children’s minds. How schools are organized, what is taught in them, the kind of norms they embrace, and the relationships they foster among adults and children all matter, for they all shape the experiences that students are likely to have and in the process influence who children will become. Experience is central to growth because experience is the medium of education. Education, in turn, is the process of learning to create ourselves, and it is what the arts, both as a process and as the fruits of that process, promote. Work in the arts is not only a way of creating performances and products; it is a way of creating our lives by expanding our consciousness, shaping our dispositions, satisfying our quest for meaning, establishing contact with others, and sharing a culture.

Humans, of all living species, have the distinctive, if perhaps not the unique, ability to create a culture through which those in their community can grow. Humans can leave a legacy. Even chimpanzees, our closest genetic relatives, have, as far as we know, no cultural development that is transmitted in a progressive way from generation to generation. Three hundred years ago chimps lived as they do today. We are not only able to experience the qualitative world, as can chimps; we can also form concepts. Concepts are distilled images in any sensory form or combination of forms that are used to represent the particulars of experience. With concepts we can do two things that may very well be unique to our species: we can imagine possibilities we have not encountered, and we can try to create, in the public sphere, the new possibilities we have imagined in the private precincts of our consciousness. We can make the private public by sharing it with others.

Transforming the private into the public is a primary process of work in both art and science. Helping the young learn how to make that transformation is another of education’s most important aims.
It is a process that depends initially upon the ability to experience the qualities of the environment, qualities that feed our conceptual life and that we then use to fuel our imaginative life.

I do not want to draw too sharp a distinction between the formation of concepts and the imaginative generation of the forms needed to create, for example, twentieth-century architecture or the improvisational riffs of an Ella Fitzgerald solo; concept formation is itself an imaginative act. Yet there is a difference between recalled images and their imaginative transformation. Were we limited to the recall of the images we had once experienced, cultural development would be in trouble. Imagination gives us images of the possible that provide a platform for seeing the actual, and by seeing the actual freshly, we can do something about creating what lies beyond it. Imagination, fed by the sensory features of experience, is expressed in the arts through the image. The image, the central term of imagination, is qualitative in character. We do indeed see in our mind’s eye.

THE ROLE OF THE ARTS IN REFINING THE SENSES AND ENLARGING THE IMAGINATION

The arts have an important role to play in refining our sensory system and cultivating our imaginative abilities. Indeed, the arts provide a kind of permission to pursue qualitative experience in a particularly focused way and to engage in the constructive exploration of what the imaginative process may engender. In this sense, the arts, in all their manifestations, are close in attitude to play. Constraints on the imagination are loosened. In the arts, in the West at least, permission is provided to explore, indeed to surrender, to the impulses the work sends to the maker, as well as those sent from the maker to the work. We see this perhaps most vividly when we watch preschoolers engaged in play. It is during this period that children take special pleasure in the sheer exploration of the sensory potential of the materials they use. It is at this time that their imaginative abilities, uninhibited by the constraints of culture, make it possible for them to convert a stick of wood into a plane they can fly, a sock into a doll they can cuddle, or an array of lines
drawn so they stand for daddy. For young children the sensory world is a source of satisfaction, and imagination a source of exploratory delight. And it is these inclinations toward satisfaction and exploration that enlightened educators and parents wish to sustain rather than to have dry up under the relentless impact of “serious” academic schooling. A culture populated by a people whose imagination is impoverished has a static future. In such a culture there will be little change because there will be little sense of possibility.

Imagination, that form of thinking that engenders images of the possible, also has a critically important cognitive function to perform aside from the creation of possible worlds. Imagination also enables us to try things out—again in the mind’s eye—without the consequences we might encounter if we had to act upon them empirically. It provides a safety net for experiment and rehearsal.7

As for sensibility, the arts invite us to attend to the qualities of sound, sight, taste, and touch so that we experience them; what we are after in the arts is the ability to perceive things, not merely to recognize them.8 We are given permission to slow down perception, to look hard, to savor the qualities that we try, under normal conditions, to treat so efficiently that we hardly notice they are there.

Sensibility and imagination can, of course, remain entirely private affairs: we can enjoy the rosy radiance of dusk in private, the colored brilliance of a Cézanne still life in silence, the symmetrical strength of a Baule mask in quiet awe. The contents of our imaginative life can be kept to ourselves. Appreciation, though active, can be mute. Something else is needed if the products of our imagination are to make a social contribution to our culture. That something else is representation.

THE MEANING OF REPRESENTATION

Representation, like sensibility and imagination, also performs critically important cognitive functions. Consider the process through which it occurs.
Representation can be thought of, first, as aimed at transforming the contents of consciousness within the constraints and affordances of a material. Representation can and often does begin with an elusive and sometimes evanescent idea or image. I say evanescent because there is nothing quite so slippery as an idea; here now, gone a moment later. Images emerge and, like the subtle changes of the setting sun, may be altered irrevocably with a blink of the eye. Representation stabilizes the idea or image in a material and makes possible a dialogue with it. It is through “inscription” (I use the term metaphorically) that the image or idea is preserved—never, to be sure, in the exact form in which it was originally experienced, but in a durable form: a painting is made, a poem is written, a line is spoken, a musical score is composed. It is through this very concreteness that representation makes possible a second, critically important process of editing. Although editing is usually associated with writing, it occurs in all art forms—painting and sculpture, music performance and music composition, theater, film and video, dance, and the rest. Editing is the process of working on inscriptions so they achieve the quality, the precision, and the power their creator desires. It is through the editing process that attention to the “wee bit” that Tolstoy believed defined art is conferred upon a work. It is in the process of editing that transitions are made graceful, colors harmonized, intensities modulated, and, indeed, seasoning to suit the palette adjusted. In the domain of writing, editing allows us carefully to inspect the precision of language, the aptness of metaphor, the logic of argument. In painting it consists in brightening a passage of color. In music it involves shifting to the minor mode. In dance it is changing the pace of a movement. Editing is paying attention to relationships and attending to details; it is a process of making the work, work. Unless one is a genius, editing is a crucial aspect of the creative process, a way of removing the rough edges from one’s work.

Inscription and editing are directly related to a third cognitive function of representation, one we usually take for granted: communication. The transformation of consciousness into a public form, which is what representation is designed to do, is a necessary condition for communication; few of us read minds. How this trans-
formation occurs, I believe, is taken much too much for granted. It is so natural a process that we hardly notice it. Yet we can ask, “How does speech, or an imagined image, or a melody we hear in our head get communicated? What must the maker do? And then what must the ‘reader’ do for it to make sense, that is, to be meaningful?”

What is clear is that culture depends upon these communications because communication patterns provide opportunities for members of a culture to grow. We develop, in part, by responding to the contributions of others, and in turn we provide others with material to which they respond. The relationship, at its best, is symbiotic. Thus the social contribution of the educational process is to make it possible for individuals to create symbiotic relationships with others through the development of their distinctive and complementary abilities and in so doing to enrich one another’s lives.

Inscribing, editing, and communicating are three cognitive processes used in the act of representation. As I have described them, each appears as if the process of representation occurred from the top down, that is, from idea or image, through the hand, into the material, and then into the head of an eager reader of text or image, sound, or movement. However, the process is not so linear. The process of representation is more of a conversation than it is like speaking into a tape recorder. The ideas and images are not so much blueprints for action detailing specific directions and destinations; they are more like embarkation points. Once into the sea, the ship rides the currents of the ocean, which also help set the course. In the process of working with the material, the work itself secures its own voice and helps set the direction. The maker is guided and, in fact, at times surrenders to the demands of the emerging forms. Opportunities in the process of working are encountered that were not envisioned when the work began, but that speak so eloquently about the promise of emerging possibilities that new options are pursued. Put succinctly, surprise, a fundamental reward of all creative work, is bestowed by the work on its maker.

Thus we can add to inscription, editing, and communication a fourth cognitive function of representation, the discovery of ends in process, which in turn generates surprise. Surprise is itself a source
of satisfaction. Familiarity and routine may provide security, but not much in the way of delight. Surprise is one of the rewards of work in the arts. In addition, it is from surprise that we are most likely to learn something. What is learned can then become a part of the individual’s repertoire, and once it is a part of that repertoire, new and more complex problems can be generated and successfully addressed. At the same time it must be acknowledged that it is quite possible to do something very well in a particular work and not know how to repeat it.

The process of representation is always mediated through some form. Some of these forms are carried by the meanings that language makes possible, including prosody, the cadences and melodies of the language itself. The way language is crafted, especially through its form and its connotative qualities, expresses emotions and adumbrates meanings that cannot be conveyed through literal denotation. But language, while a central and primary form of representation, is by no means the only form of representation. Forms that appeal to our sense of sight are also fundamental modes of communication and have been since humans inscribed images on the walls of the caves in Lascaux some seventeen thousand years ago. Sound in the form of music is also a means through which meanings are conveyed. Indeed, there is no sensory modality that humans have not used to express what imagination has generated. Forms of representation are means through which the contents of consciousness are made public. The process of making the contents of consciousness public is, as I indicated earlier, a way of discovering it, stabilizing it, editing it, and sharing it.

The selection of a form of representation is a choice having profound consequences for our mental life, because choices about which forms of representation will be used are also choices about which aspects of the world will be experienced. Why? Because people tend to seek what they are able to represent. If your camera is loaded with black-and-white film, you look for shadows, for light and dark, but if the same camera is loaded with color film, you seek color. What the film in your camera can do influences what you will do. If the only tool you have is a yardstick, you look for what you can measure. Put another way, the tools you work with
influence what you are likely to think about. Measuring tools lead to quantification; the tools used in the arts lead to qualification.

Consider the implications of the relationship between forms of representation for the selection of content in the school curriculum. Learning to use particular forms of representation is also learning to think and represent meaning in particular ways. How broad is the current distribution? What forms of representation are emphasized? In what forms are students expected to become “literate”? What modes of cognition are stimulated, practiced, and refined by the forms that are made available? Questions such as these direct our attention to the relationship of the content of school programs to the kinds of mental skills and modes of thinking that students have an opportunity to develop. In this sense, the school’s curriculum can be considered a mind-altering device. And it should be.

Although we seldom think about the curriculum this way, parents send their children to school to have their minds made. In school, children learn how to think about the world in new ways. The culture provides the options in the various fields of study included, and various communities make the selections through choices reflected in graduation requirements, state education codes, college admission requirements, and the like. These selections are among the most significant policy decisions a community can make. Such decisions help influence how we think.

THE COGNITIVE FUNCTIONS OF THE ARTS

What are the cognitive functions performed by the arts? By the term cognition I mean to include all those processes through which the organism becomes aware of the environment or its own consciousness. It includes the most sophisticated forms of problem-solving imaginable through the loftiest flights of the imagination. Thinking, in any of its manifestations, is a cognitive event. The noncognitive pertains to forms of life of which we have no awareness. Blood flows through our veins, but typically we are not aware of the course it takes. Events occur about which we are unaware. This is not to say that factors about which we are unaware cannot
influence our behavior or attitudes; they can. But to the extent that we are unaware of them, those events are outside the realm of cognition.

With respect to art and its meaning, I share Dewey’s view that art is a mode of human experience that in principle can be secured whenever an individual interacts with any aspect of the world. The arts are typically crafted to make aesthetic forms of experience possible. Works of art do not ensure that such experience will emerge, but they increase the probability that it will as long as those in their presence are inclined to experience such work with respect to their aesthetic features. The Parthenon and the Sistine ceiling can be ignored by someone in their presence; yet even a stone can be attended to so that its aesthetic character can serve as a source of that special form of life we call art.

One cognitive function the arts perform is to help us learn to notice the world. A Monet landscape or a Paul Strand photograph makes possible a new way of seeing: Monet’s shimmering color gives us a new way to see light. Paul Strand’s photographs provide a new way to experience the geometry of industrial cities. Art provides the conditions for awakening to the world around us. In this sense, the arts provide a way of knowing.

Aside from promoting our awareness of aspects of the world we had not experienced consciously before, the arts provide permission to engage the imagination as a means for exploring new possibilities. The arts liberate us from the literal; they enable us to step into the shoes of others and to experience vicariously what we have not experienced directly. Cultural development depends upon such capacities, and the arts play an extraordinarily important role in their contribution to such an aim.

Work in the arts also invites the development of a disposition to tolerate ambiguity, to explore what is uncertain, to exercise judgment free from prescriptive rules and procedures. In the arts, the locus of evaluation is internal, and the so-called subjective side of ourselves has an opportunity to be utilized. In a sense, work in the arts enables us to stop looking over our shoulder and to direct our attention inward to what we believe or feel. Such a disposition is at the root of the development of individual autonomy.
Another cognitive function of the arts is that in the process of creation they stabilize what would otherwise be evanescent. Ideas and images are very difficult to hold onto unless they are inscribed in a material that gives them at least a kind of semipermanence. The arts, as vehicles through which such inscriptions occur, enable us to inspect more carefully our own ideas, whether those ideas emerge in the form of language, music, or vision. The works we create speak back to us, and we become in their presence a part of a conversation that enables us to “see what we have said.”

Finally, the arts are means of exploring our own interior landscape. When the arts genuinely move us, we discover what it is that we are capable of experiencing. In this sense, the arts help us discover the contours of our emotional selves. They provide resources for experiencing the range and varieties of our responsive capacities.

To discover the cognitive functions of other visual forms of representation, consider the use of maps. Why do we draw them? Why do we use them? Maps are drawn and used because they help us grasp relationships that would be harder to grasp, for example, in narrative or number. We use maps because they display, by a structural analogue, relationships in space that provide a useful image of the world we wish to navigate. Maps lay it out for us. So do histograms, charts, diagrams, and sketches. The inscription of visual images makes vivid certain relationships. They help us to notice and understand a particular environment and our place in it.

They also obscure. Thus the paradox: a way of seeing is also, and at the same time, a way of not seeing. Relationships that are made visible through maps also obscure what any particular map does not illuminate—the feel of a place, its look and color, what is idiosyncratic about it, its aroma, the lifestyles of the people who live there. Maps effectively simplify. We want them to, but we should not forget that the map is not the territory. The view they provide is always partial—as is any view. And precisely because any single view is partial, it is important, depending upon our purpose, to secure other views that provide other pictures.

I have been speaking of the cognitive functions of the arts largely in terms of the way they illuminate, that is, what they help
us see. But the arts go well beyond making visible the visible; they also tell us something about how places and relationships feel. They speak to us, as Susanne Langer said, through the emotions: “A work of art presents feeling (in the broad sense I mentioned before, as everything that can be felt) for our contemplation, making it visible or audible or in some way perceivable through a symbol, not inferable from a symptom. Artistic form is congruent with the dynamic forms of our direct sensuous, mental, and emotional life; works of art are projections of ‘felt life,’ as Henry James called it, into spatial, temporal, and poetic structures. They are images of feeling, that formulate it for our cognition.”¹²

Through the arts we learn to see what we had not noticed, to feel what we had not felt, and to employ forms of thinking that are indigenous to the arts. These experiences are consequential, for through them we engage in a process through which the self is remade. What are the features of this transformational process? How does it proceed? What does it mean in the context of education?

**THE ARTS AND PERSONAL TRANSFORMATION**

Every task and each material with which we work both imposes constraints and provides opportunities for the development of mind. For example, if students are to develop their ability to think metaphorically, they need opportunities, examples, and encouragement to use metaphors in their speech and writing. The ability to think metaphorically is not the outcome of a single occasion; it requires repeated opportunities to explore the poetic use of language, a use of language that generates meaning through indirectness, allusion, and innuendo. It is literalism that suppresses the almost natural tendency to use language poetically, as very young children often do. Similarly, if students are to learn to see and talk about visual qualities, they need occasions for such seeing and talking.

Seeing is an achievement, not merely a task.¹³ It is the result of *making* sense of a part of the world. Learning to see the qualities that constitute a visual field requires a mode of attention that is rarely employed in “ordinary” living. Most of our so-called seeing...
is instrumental in nature. We see in order to recognize, and recognition, according to Dewey, is completed as soon as a label is attached to what we have seen. In such “seeing,” seeing is aborted.\textsuperscript{14} It is stopped well before the qualities of the visual field are explored. When the qualities of the visual field are explored, the stage is set for their public articulation.

Developing a language with which to talk about visual qualities is an attitudinal as well as a linguistic achievement.\textsuperscript{15} To talk about qualities of a visual field—how, for example, colors and forms play off each other—often requires the use of simile and the invention of words—neologisms—that will, through innuendo more than through explicit language, convey the distinctive sense of the qualities perceived. Again, the skillful use of such language is the result of having developed both certain modes of thought and a receptive attitude toward their use. When teachers provide opportunities for students to engage in tasks that practice such skills and attitudes, they are providing opportunities for the development of mind. And when they organize the tasks students address so that students learn to connect what they have learned in their school to the world beyond it, they are developing their students’ ability to extend and apply what they have learned to other domains, a process that in the psychological literature is referred to as transfer, an ability teachers are encouraged to foster.\textsuperscript{16}

The point here is that the kind of deliberately designed tasks students are offered in school help define the kind of thinking they will learn to do. The kind of thinking students learn to do will influence what they come to know and the kind of cognitive skills they acquire. As I said earlier, the curriculum is a mind-altering device. We design educational programs not merely to improve schools, but also to improve the ways in which students think. Each of the fields or disciplines that students encounter provides a framework, that is, a structure, schema, and theory, through which the world is experienced, organized, and understood. Each imposes different demands upon the student. Different fields, for example, require the use of different techniques and an understanding of the materials and ideas that will be used. In a sense, we get smart with a form of representation as we discover its limits and
possibilities, what it will do and what it won’t. Let me illustrate by describing the forms of thinking used in watercolor painting.

Watercolor is an unforgiving medium. By this I mean that watercolor does not tolerate indecisiveness well. Mistakes are hard to camouflage. Unlike oil painting, in which changes of mind can be covered up, in watercolor everything shows. The practical implications of this fact are significant. Timing is crucial. A sheet of watercolor paper that has been soaked with water in preparation for pigment dries at different rates depending on the amount of water it has received, the ambient temperature, and the amount of time that has elapsed since it was soaked. Since the amount of wetness the paper possesses affects the flow of pigment, knowing when to apply a brush charged with pigment is crucial. This form of knowing also requires one to know how much pigment is on the brush; too much for the amount of water on the paper will make the color puddle or bleed. How does one know how much pigment is on the brush? One way is to be aware of the weight of its tip, a very fine-grained assessment that experienced watercolorists possess.

Even when these skills have been mastered, the watercolorist needs to think strategically. Strategic thinking in watercolor painting means deciding what must be painted in what order. Because watercolors are transparent, dark colors will cover light colors or be altered by them. Thus, knowing when to leave white space on the paper and when to lay a colored wash on the paper is of critical importance if the work is to cohere visually. Here, too, timing and tempo matter.

But although timing is critical, it is essentially a technical achievement. The aesthetic aspects of the work must also be addressed. How forms relate to the artist’s intention, how colors interact, and how vitality is maintained so that the image is not dead on arrival are at the heart of the artistic enterprise. And because the “variables” are so numerous and complex and because there are no formulas to employ to guarantee a rightness of fit, an immersed engagement, one that commands all of one’s attention and intelligence is necessary. Indeed, regarding the demands upon intelligence in creating a work of art, John Dewey had this to say:
Any idea that ignores the necessary role of intelligence in the production of works of art is based upon identification of thinking with use of one special kind of material, verbal signs and words. To think effectively in terms of relations of qualities is as severe a demand upon thought as to think in terms of symbols, verbal and mathematical. Indeed, since words are easily manipulated in mechanical ways, the production of a work of genuine art probably demands more intelligence than does most of the so-called thinking that goes on among those who pride themselves on being 'intellectuals.'\(^{17}\)

What occurs as individuals become increasingly competent in watercolor painting is the development of intelligence in that domain. This development requires the ability to deal effectively with multiple demands simultaneously.\(^{18}\) And it is in learning to engage in that process that perception is refined, imagination stimulated, judgment fostered, and technical skills developed. Given the complexities of these demands it is ironic that the arts should be widely regarded as noncognitive.

Thus far we have talked about the role of the senses in concept formation, the function of the imagination in envisioning worlds we can create, and the process of representation through which inscription, editing, communication, and discovery take place. But how do forms of representation become meaningful? How do they come to express or refer? Let me describe three ways in which artists treat forms of representation so that they affect how meanings are conveyed.

**THREE MODES OF TREATMENT**

One mode of treatment is *mimetic*. By mimetic I refer to forms that look or sound like what they are intended to represent. For centuries artists struggled with the development of techniques through which to put (visual) “holes” in canvases; they were concerned with inventing ways to create the illusion of the third dimension, and in the West, around the fifteenth century, they began to find out how.\(^{19}\) In Western culture many children from about eight to
twelve years of age desire to learn how to create convincing illu-
sion. Artistic progress in their eyes is defined by the mimetic qual-
ity of their rendering. If an adult should suggest that they use their
imagination to draw an animal, the suggestion may be rejected as
a cop-out; they want their animal to look like a real animal!

Mimesis, however, need not achieve a high level of verisimili-
tude. Consider signage designating men’s and women’s rest rooms.
Here the simplified structural features of male and female forms
are enough to designate. Indeed, in this situation a simplified
image is preferable: it communicates more easily than one that is
individualized through detail excessive for its function. What is
wanted is an image that is both general and specific enough to dif-
ferrntiate men from women.

We find such forms used by young children. According to
Rudolf Arnheim, children create within the affordances of the ma-
terial with which they work the structural equivalences of the images
they wish to render.20 And because the drawings made by children
between four and eight are often didactic in aim—that is, children
of this age are often more interested in depicting a set of events or
a story than in mastering the ability to create verisimilitude—the
relevant criterion for them is whether their image is sufficient to
depict the story. This concern with the didactic or storytelling func-
tions of visual form often leads to the use of visual conventions
that stand for the subject they wish to represent. Thus, pictures of
houses with peaked roofs can be found in the drawings of children
who live in suburban neighborhoods in which there are no houses
with peaked roofs. Children acquire visual conventions to stand
for a house, or tree, or person, or sun, or bird. In fact many of these
conventions are widely shared by children in our culture. The
peaked-roof houses are also often drawn with windows having
curtains pulled to each side.

Mimesis is not the only way of representing images and con-
vveying meaning. The arts can depict not only what is seen or heard;
they can also depict what is felt. This brings us to a second mode
of treatment, the creation of expressive form.

The representation of feeling is achieved in many ways. Per-
haps the most important is the way in which visual form—line,
color, shape, value, texture, all aspects of form—is composed. Those working in music, dance, literature, poetry, and theater craft other qualities for expressive purposes. According to Gestalt theory, the forms that artists create generate fields of energy that are picked up by our nervous system, which in turn creates a resonance in the perceiver. Thus, fast and loud music produces a kind of experiential equivalent in the listener; slow and soft music creates a quite different resonance and hence a different experience. By manipulating form, artists manipulate experience.

But if all responses could be explained by the formal relations among the composed qualities of the artwork, everyone’s response to the same visual form would be essentially alike. Clearly, it isn’t. Culture and personal experience interact. The meaning secured from a work depends not only on the features of the work but also on what the individual brings to it. Different backgrounds lead to different experiences of the same work. A painting of Jesus for a practicing Catholic takes on a meaning different from that for an agnostic. A person who has long collected nonobjective painting and who understands its place in the history of art is likely to experience a painting by Willem de Kooning quite differently from someone who has never heard of Abstract Expressionism.

Nevertheless, the primary point should not be lost: the way forms are treated by the artist—or by the child—has a great deal to do with what the work expresses. And it is the possession of a fertile imagination and an array of technical skills that enable artists to shape forms that influence how we feel in their presence.

The crafting of expressive form does not preclude the presence of mimetic forms. On the contrary. Nonobjective art is a comparatively recent arrival on the artistic landscape. The religious paintings made in Europe in the thirteenth century secure their tranquility from the way the monks who painted them treated form. That treatment is found in the way figures are depicted as well as in the way the entire composition is organized. Again, young children can create similar effects, more often through accident than through the intentional and the reflective control of the material. Yet their paintings and drawings also evoke emotion through the way forms are rendered. In fact, all forms possess what are called
physiognomic properties. That is, all forms possess qualities that express or evoke feeling or emotion. In the arts the expressive character of forms is brought under the intelligent control of experience and technique. Artists, by virtue of their experience and technical skills, are able to compose form in the service of feeling. Thus, artistry requires, in part, the ability to conceive of the emotional quality desired and the technical ability to compose form capable of evoking the feeling or emotion desired.

A third mode of treatment occurs through the use of conventional signs. Conventional signs are socially agreed-upon symbols that refer to ideas, objects, or events and the like. A flag made up of fifty white stars on a blue field and thirteen red and white stripes is likely to refer in certain contexts to the United States of America; a cross and a six-sided star in certain contexts refer by social agreement to two different religions.

You will notice that I restricted the meaning of these conventional signs with the qualifier “in certain contexts.” The qualification is necessary because meaning is always influenced by the particular context in which a work appears. The American flag can mean one thing on the grave of a dead soldier and quite another on the floor of an art museum. In fact artists frequently place familiar conventional signs in unusual contexts to awaken us from our customary modes of perception. These contexts evoke meanings that depend on “the shock of the new.” Perhaps some of the most vivid examples of visual recontextualization are to be found in Surrealism and some kinds of Pop Art.

The study of conventional signs in the arts is the focus of a field called iconology. Iconologists study symbols that do not necessarily look like what they refer to or represent but that nevertheless refer to them: the golden fleece, the mirror, the cross, the key, the lantern all have iconographic meaning. A viewer would need to understand the significance of these signs and symbols in order to secure a “full reading” of the picture.

What we find in looking at art is that artists often employ all three modes of treatment in the same work. And so too do children. The ability to create images in which mimesis, expressiveness, and conventional signs convey the creator’s aims is a sub-
stantial cognitive accomplishment. It requires a repertoire of technical skills, a sensitivity to relationships among the forms, and the ability to use appropriate conventional signs. The kind of thinking required to create such images cannot be conducted by appeals to algorithms, formulas, or recipes. And even when the schema for the creation of forms is familiar, there is always significant uniqueness in the particular configuration, so that the formulaic use of such a schema is unlikely to achieve a satisfying aesthetic resolution. Somatic knowledge must be employed.\textsuperscript{22}

Somatic knowledge, what is sometimes called embodied knowledge, is experienced in different locations. Some images resonate with our gut, others with our eyes, still others with our fantasies; artists play with our imagination. Some visual images are essentially tactile experiences. Works of art can call upon both the ideational and any of the sensory resources we use to experience the world; the fact that an image is visual does not mean that the experience we have of it will be visual. All of us have synesthetic experiences. In a sense all these capacities for human experience are resources the artist can call upon in the crafting of the image. In the hands and mind of the artist they are avenues for communication.

THE ARTS AND TRANSFORMING CONSCIOUSNESS

So how do the arts affect consciousness?\textsuperscript{23} They do so in a number of ways. They refine our senses so that our ability to experience the world is made more complex and subtle; they promote the use of our imaginative capacities so that we can envision what we cannot actually see, taste, touch, hear, and smell; they provide models through which we can experience the world in new ways; and they provide the materials and occasions for learning to grapple with problems that depend on arts-related forms of thinking. They also celebrate the consummatory, noninstrumental aspects of human experience and provide the means through which meanings that are ineffable, but feelingful, can be expressed.

Before we move on, let me recount the argument I have advanced so far. In distilled form it is as follows:
1. Humans are sentient creatures born into a qualitative environment in and through which they live.

The ability to experience the full range of qualities that constitute the empirical environment is directly related to the functions of our sensory system. We are biologically designed to be sensitive to the array of qualities that constitute that environment. Our ability to see depends upon the capacities of sight, hearing, touch, and the like. If we were congenitally deaf or blind, we would lack the ability to experience the auditory or visual aspects of the world.

But of course the activation of our sensory system also depends upon our being in an environment that possesses the qualities to which our senses are responsive. When, for example, visual stimulation is unavailable, our visual experience is also absent, and indeed the development of our visual system may be irrevocably undermined. Kittens whose eyes have been occluded during the first few months of life lose their capacity to see when the occlusions are removed.24 The actualization of capacity, that is, its transformation from capacity to ability, depends on both what the individual brings to the environment and what the environment brings to the individual. During the course of human development there are certain critical periods during which stimulation and nurture of sensory capacities are crucial.

2. The sensory system is the primary resource through which the qualitative environment is experienced.

Observations of infants and preschoolers provide compelling evidence of their need to experience and understand the world by exploring its qualities. Almost everything they encounter is not only touched, but when possible tasted, listened to, explored through as many sensory channels as lend themselves to knowledge of its qualitative features. Getting to know the world for the preschool child means, in large measure, getting to know how it can be experienced through all the sensory modalities.

3. As children mature, their ability to experience qualities in the environment becomes increasingly differentiated.

The child’s initial experience with the qualitative world in and through which she lives is not a form of experience that is automatically given to the child. In a very significant sense, what the
child learns about the world is influenced by the way in which she explores its features. This exploration leads to the construction of distinctions among the qualities encountered: there are varieties of sweetness, varieties of puppies, varieties of hardness, varieties of sound. A child learns over time to differentiate among qualities, to recognize her mother’s face, for example, among all the faces the child can see. Differentiation is a way of recognizing what is familiar, categorizing qualities, and anticipating the consequences of action upon those qualities. One of the potentially large lessons of work in the arts is the contribution good arts teaching makes to the child’s ability to perceive subtleties and to recognize complexities among the qualitative relationships encountered in the phenomenal world.

4. Differentiation enables children to form concepts. Concepts are images formed in one or more sensory modalities that serve as proxies for a class of associated qualities.

The formulation of concepts is, in a sense, a data-reduction process of distilling the essential features of an array of qualities so that they stand for a larger class of phenomena. Distinguishing between dogs and cats requires the ability to notice differences between them. The concept “dog” and the concept “cat” are qualitative abstractions of those essential differentiating features, and over time children learn to make those distinctions and to give them a name. Put another way, concept formation is an imaginative activity in which images in one or more sensory modalities are formed that stand for an array of qualities associated with a signifier.

The symbol of the Red Cross, given the particular proportions of its shape, stands as a signifier for a class of meanings related to services provided to those in need of medical care. For such a signifier to be meaningful, the individual must have some conception of the meaning of medical care. Meanings are nested into levels of abstraction, but are reducible to a proxy. This proxy can be visual, as in the case of the Red Cross; it can be auditory, as in the case of “God Save the Queen”; it can be linguistic, as in the meanings associated with the phrase “The Constitution of the United States.”

5. Concepts and the meanings they acquire can be represented in any material or symbolic system that can be used as a proxy for it.
Our conceptual life operates in each of the sensory modalities and in their combination. We not only can generate in the mind’s eye a visual image; we can see that image even while hearing music “around” it. We can taste a banana without actually tasting it. We can envision an opera without actually seeing or hearing it. Our capacity to envision is transformed by the effort to represent what we have experienced. Representation can be pursued in any material or form that can be crafted; thus, the same theme can be danced, painted, or described literally or poetically. In a metaphorical sense, becoming multiliterate means being able to inscribe or decode meaning in different forms of representation.

6. The child’s developing ability to differentiate, to form concepts, and to represent those concepts reflects the use and growth of mind.

Our conceptual life takes on a public form when the images distilled and formed as concepts are “embodied” in some form of representation. As intelligence is promoted in the representation process and as individuals become increasingly imaginative and technically competent at transforming concepts and their associated meanings into forms, the use and the growth of mind are revealed.

Intelligence, in a sense, has to do with the competence or skill with which we conduct some activity. The character of that activity, particularly as it is revealed over time, is a marker on the road toward cognitive development. Thus we can see in children’s drawings, in their musical performances, in their ability to write poetry, in their sensitivity in the area of dance, the mind being practiced and its growth made manifest in a public form.

7. Which aspects of the environment will be attended to, the purposes for which such attention is used, and the material the child employs to represent it influence the kind of cognitive abilities the child is likely to develop. More broadly, the child’s mind is shaped by the culture of which the foregoing conditions are a part.

The human mind is a kind of cultural invention. To be sure children come into the world well wired, but how they develop, which aptitudes are cultivated and which are left to atrophy, what modes of thinking they become good at are all influenced by the
culture in which they reside. The forces within that culture are given operational significance through the formation of purposes. The aim of the inquiry or act and the type of material the child uses impose their own constraints and provide their own affordances. The ability to swim well requires material we call water. Without it, our capacity to swim would never achieve the status of an ability; abilities are realized capacities. Thus, the features of the culture to which the child will be exposed and the manner in which the child will address that culture are the most powerful indicators of the kind of thinking and therefore the kind of mind a child is likely to develop during the course of childhood.

8. The decision to use a particular form of representation influences not only what can be represented, but also what will be experienced. We tend to seek what we are able to represent. The representational process is normally regarded as a means through which the contents of our consciousness are made public. This conception is all too tidy. We represent not only what we aim at, but also what we discover in the course of expressive action.

But even more, the medium we choose to use and the particular form of representation we select—say, sound rather than a visual form—affect our perception of the world. If we are to represent something through a medium, we try to find qualities of experience or features of the world that will lend themselves to the medium we have selected. Thus, representation influences not only what we intend to express, but also what we are able to see in the first place.

9. The arts invite children to pay attention to the environment’s expressive features and to the products of their imagination and to craft a material so that it expresses or evokes an emotional or feelingful response to it.

In the context of practical activity, the criterion of efficiency matters a great deal. Normally we try to see the world and act upon it with the least amount of energy that will satisfy the realization of our purposes. Put another way, we typically see things in order to classify and use them.

We try to do things efficiently to avoid wasting time, effort, energy. What we do not typically seek are the expressive features or
the emotional tone of what we pay attention to. We speed up perception to get on with our work. One of the large lessons the arts teach is how to secure the feelingful experience that slowed perception makes possible; the arts help students learn how to savor qualities by taking the time to really look so that they can see.

10. A major aim of arts education is to promote the child’s ability to develop his or her mind through the experience that the creation or perception of expressive form makes possible. In this activity sensibilities are refined, distinctions are made more subtle, the imagination is stimulated, and skills are developed to give form feeling.

The phrase “the child’s ability to develop his or her mind” is intended to reemphasize the point that education is a process of learning how to become the architect of your own experience and therefore learning how to create yourself. The arts have distinctive contributions to make to that end through their emphasis on the expression of individuality and through the exercise and development of the imaginative capacities.

We now turn to alternative visions of arts education.