

look at the work of their peers and at the same time become increasingly independent. Movement in the class is not prohibited; if students need something, they are expected to get it. It is also expected that the teacher will be able to distinguish between "goofing off" and the necessity of moving about in order to meet real needs. It is expected that students will come to the classroom to work, that they will have the materials they need to work with, that they will initiate their work as they enter the classroom and not feel the need to wait for a signal from the teacher before they begin.

These norms aim at creating an environment that approximates a studio's and at establishing expectations that students will help one another. In this environment comments made by the teacher are both private and personalized when it is time to talk about the qualities of individuals' work. Comments are public when it is time for group critique. It is an environment in which students are learning to think and behave like artists.⁵

Task demands, teacher prompts, and classroom norms considered collectively constitute the fourth force that affects what students learn in the arts. That collective force is the creation of a classroom milieu. Classroom life in the arts does not usually resemble life in academic classrooms. In the choral setting, students are collectively engaged in a common enterprise. In the art room, students are given permission to direct their own activities in settings that provide much more space for personal initiative than is normally found in most academic settings. In dance class, students focus on the development of aesthetically shaped movement but then work with other dancers to put aspects of their individual performance together with theirs. Similar factors are at work in theater; lines may be learned solo, but performance is seldom effected alone.

These interacting forces create a cognitive culture that has as much to do with developing dispositions as with developing aesthetic and analytic abilities. It is a culture that, at its best, models what adults do in those realms. What the milieu teaches is seldom on the list of aims for the arts, yet what the milieu teaches can be of prime importance in helping students learn what it feels like to

function as a budding artist, to be really engaged in one's work, not for extrinsic reasons but for intrinsic ones.

Given this backdrop, let's turn to what the arts teach as students engage in them in class. Up to this point I have been talking largely about lessons learned in classroom settings. But what is it that students learn when they are engaged directly in art activities? Several caveats are in order here. First, everything that I have to say about the educational value of the arts is predicated on the provision of excellent teaching. Poor teaching can scuttle the potential contributions of any field. Second, because my own background is in the visual arts, I will focus upon the visual arts, but I believe that the general factors I identify have their counterparts in the other arts as well. Third, I said earlier that the arts can be used to move students toward a variety of destinations. I am choosing here to focus on two domains in which learning about the visual arts can be fostered because I am interested in furthering the modes of thought that make it possible for students to use materials as media for artistic expression: learning to think aesthetically about images and their creation and helping them advance their ability to see the world aesthetically and to describe it in artistically sensitive ways.

WHAT THE ARTS TEACH

Attention to Relationships

A fundamental concern of anyone working in the arts, whether painting, composing music, writing poetry, or engaging in dance, is to create satisfying and expressive relationships among the "parts" that constitute a whole. Composing, the putting together of elements, can be resolved in the arts only by paying attention not to literal matters, not to matters of reference or to logic, but to qualitative matters. How do the parts of the composition hold together? Do some parts dominate? Is there, as Nelson Goodman calls it, "a rightness of fit"?⁶

The creation of such relationships, relationships that display rightness of fit, require careful attention to highly nuanced quali-

ties; very subtle differences in the temperature of a color or in the strength of a line can make all the difference between achieving a satisfying array of relationships or an array that doesn't work.

Learning to see these relationships requires use of a new form of vision. Most perceptual activities are essentially efforts to recognize rather than to explore the particular expressive qualities of a form. In typical circumstances, seeing stops when a label can be assigned to a quality.⁷ That's my house. That's a stop sign. That's my Uncle Harry. Other forms of perception attend to component qualities but do not explore the relationships among them. In Piaget's terms, perception is "centrated" rather than "decentered."⁸ In Arnheim's terms, the solution is "local" rather than "contextual."⁹ The viewer looks, but looks at parts rather than at the ways those parts interact with each other. Teaching in the arts is very much concerned with helping students learn how to see the interactions among the qualities constituting the whole. This lesson is, of course, a major lesson art students learn in life drawing classes. It is here that not only must the configuration of the figure be addressed; the student must also see the figure in relation to the ground on which it is to be placed. If the figure is, for example, off-center, the balance needed to achieve a satisfying image will be lost. If one wants an unbalanced image, fine. If not, there is work to be done.

One of the techniques people use to heighten awareness of these relationships can be seen in an art museum as people move close to a painting and then step back several feet. Move up, and then step back. What is happening here is a kind of visual analysis—synthesis relationship. The person is trying to see the details or nuances of the part and then, by moving back, how those qualities influence the whole. One might say that it's a kind of dance in the service of sight.

In the kind of perception I am describing, sight alone will not be adequate for resolving problems of fit. Problems of fit must be addressed not only through sight but also, as I indicated in Chapter 1, through *somatic knowledge*, through being tuned in to the work and being able to make adjustments to the image on the basis of what is felt emotionally.¹⁰ Body knowledge comes into being as

the individual learns how to use sight to inform feeling. In this sense, each modification of the image in the course of doing a painting or drawing and its emotional consequence can be likened to a personal experiment. The efficacy of the move is known by its effects on our experience. These effects then become cues for further adjustment. Over the years artists in all fields have become extremely sensitive to these embodied effects and depend upon them to make choices about emerging forms.

The sensitivities I have described come into play in the entire painting process. A painter, for example, must make choices that depend upon "feel" well before the finishing touch is applied to the work. The artist regards preliminary moves as leading to the creation of qualitative relationships that are necessary if the creation of later qualities is to be possible. For example, an underpainting having particular qualities may need to be achieved before the overpainting can be applied; unless the underpainting possesses the necessary qualities, the overpainting will not have the desired effect. What we have here is more than technical expertise—although it is surely that; it is also the creation of a somatic connection with the work, a connection secured through refined sensibilities. What such choices depend upon is judgment in the absence of rules. Indeed, if there were rules for making such choices, judgment would not be necessary. As in the scoring of multiple-choice tests, judgment would be superfluous; the optical scoring device scores without considering alternatives. Work in the arts, unlike many other rule-governed forms of performance, always leaves the door open to choice, and choice in this domain depends upon a sense of rightness, a form of somatic knowledge that allows the maker finally to arrive at that most difficult of artistic decisions: "It's done."

Flexible Purposing

The term *flexible purposing* is Dewey's.¹¹ In the context of this book, flexible purposing pertains to the improvisational side of intelligence as it is employed in the arts. The intelligence I speak of is the ability to shift direction, even to redefine one's aims when better options emerge in the course of one's work. In many ways this

willingness to treat ends flexibly and temporarily flies in the face of our dominant view of rationality. According to the standard view, ends are supposed to be well defined, firmly held, and used to formulate means, which are theoretically related to the achievement of those ends. Once means have been employed, evaluation is to follow. If means are found wanting, new means are conceptualized and implemented, and their effects evaluated. Again, if means are ineffective, even newer means are implemented. Ends are held constant in the standard view of rational behavior. Means follow goals. It's all quite neat.¹²

The problem is that it's too neat. Life does not proceed that way, and for good reason. The implementation of means might lead to unanticipated effects that may be more interesting, promising, or problematic than the ones originally sought. In such cases, and especially so in the arts, the individual takes his or her lead from the work. The work, so to speak, also speaks, and at times it is the artist who listens. The work in progress begins to look more like a conversation than a lecture. This conversational quality is almost literally true in jazz improvisation, in which musicians do not know prior to performance what their musical conversation will consist of, at least not in precise terms.¹³

Of course, improvisation occurs in the other arts as well, including the performance of music when a score is available. Even in such cases performance is never mechanical routine. Within the constraints of the score the musician improvises by choosing to modulate sound in ways that are innovative. The same holds true for the visual arts. Not all the consequences that flow from the process of painting or drawing can be predicted, and when what emerges is found attractive, the artist may very well take his or her lead from the work. "This passage of color looks promising." "I think I will alter this so that it works with that." Part of the joy of painting consists in the microdiscoveries that the work in progress makes possible. As I mentioned in Chapter 1, these microdiscoveries provide for surprise, and surprise is one of the rewards of work in the arts. The kind of flexible purposing fostered in the arts might develop forms of thinking and attitudes toward problems that

emerge in other fields, but such outcomes are never the arts' primary educational justification.

To pursue surprise requires the willingness to take risks, for while surprise itself may emerge, its pursuit is a choice. In choosing to pursue surprise one selects an uncertain path, and it is here that familiar schema and customary techniques may prove ineffective. One of the challenging features of work in the visual arts is the tendency to revert to familiar routines in order to resolve a visual problem, and this tendency can become even more severe when the artist has been successful in previous work. The easiest road to follow is to try to repeat past victories. When the arts are well taught, flexible purposing is encouraged.

Using Materials as a Medium

Close your eyes and imagine you are driving in an open car on a beautiful country road on a sunny day in May. The sky is blue and punctuated by large white cumulus clouds overhead. As you drive down the road you see a green field with a dark brown horse far in the distance. You slow down, stop the car at the side of the road, and get out to get a better view. As you stand by the fence the dark brown horse begins to move, slowly at first, but as it moves it picks up speed, from a walk, into a trot, into a canter, a gallop, and a full run; and as this happens, with each increase in speed the color of the horse begins to change, from dark brown, to gray, to a deep dark blue. And while this is happening white wings on the back of the horse appear, and as they appear they begin to move, lifting the horse into the blue sky. The image gets smaller and smaller as it rises, and as you stand there slack-jawed, it disappears in a large white cloud.

I have no doubt that you were able to envision the scene I have described. Now suppose you were asked to represent that scene in a painting, next in a dance, then in a musical score that you will compose, and, finally, in a short story. Each material and each art form imposes its own possibilities. In dance you must think in terms of bodies in motion that somehow "capture" the scene or express the emotion you experienced or wish the viewer to experi-

rience. Painting, a physically static product, requires other modes of thinking. In dance, movement is actual. In painting, movement is virtual. Furthermore, dance need not deal much in color. In painting, color is likely to be important. The way composition is shaped in each of the materials differs. In dance, composition is in constant change. In painting, it is stable. What you are able to achieve will depend on what you are able to do with the material. This doing represents a transformation of a material into a medium. Materials *become* media when they mediate. What do they mediate? They mediate the aims and choices the individual makes. In this sense, to convert a material into a medium is an achievement. A material becomes a medium when it conveys what the artist or student intended or discovered and chose to leave.

If a material is to be used as a medium, techniques for working with the material must be developed. For children of different ages the level of skill development will differ. But always, to some degree, skills must be at hand. Young children given a ball of clay and asked to make a tree will make quite a different form than they will if asked to draw a tree.¹⁴ The characteristics of the materials call up different conceptions and skills that function within the limits and possibilities of the material, and it is within the limits and possibilities of the material that cognition proceeds. As they mature, children's recognition of the material's potential expands, and when their technical skills live up to their expanding conceptions of what they want to create, the quality of their artistry increases.

Now it is easy to think about skills and techniques as rather mechanical processes. They can be. But they need not be. To think skillfully is an act of intelligence, and to modulate technique so that it serves one's purposes requires sensitivity to nuanced qualities. Thinking well within a medium requires an understanding of the potential possibilities and limits of the material with which one works. But it also requires more. If sound in the context of music is to be the medium, attending to the patterns of sound is the mode of cognition. If paint in the context of the visual arts is to function as a medium, thinking needs to focus on the organization of what is visual. Seeing or imagining how something will look is crucial.

To point out that each material imposes its own limits is not to say that thinking in modalities that differ from the one in which the material resides does not occur. It does. As one works on a sculpture, language may come into play to help think through the problem, to consider alternatives, to reflect on what has been done and what needs to be done. Internal monologues—inner speech, a form of self-regulation—are ways of dealing with complexity in the safety of one's private cognitive life. The cost of an empirical try-out may be too high, given the lesser cost of trying out ideas in one's mind.

Shaping Form to Create Expressive Content

The hallmark of the aesthetic is perhaps best known by contrast with its opposite, the *anesthetic*. An anesthetic suppresses feeling; it dulls the senses. It renders you numb to feeling. What is aesthetic heightens feeling. What is aesthetic is pervaded by an emotional tone made possible by the process of being engaged in a work of art. The phrase "work of art" can have two meanings. It can refer to work of *art*, or it can refer to the *work* of art. The former refers to the product created, the latter to the process of creating it. Aesthetic experience can be secured at each location.

We may ask what it is about the work that causes us to be touched or moved in its presence. The answer can be found in the value that aesthetic experience has for us. The experience of a powerful play, a moving symphonic score, a jazz trio at its best, or an architectural masterpiece like Frank Lloyd Wright's "Falling Water" provides an emotional yield that is, for some, well worth a trip to the ends of the earth. If the payoff weren't there, the effort would not be made.

But what is it about these and other such works that evokes in the receptive viewer the experience I speak of? In one sense the answer seems plain: it's the way forms are crafted. It's the shape they take. It's the relationships they display. *Artistry consists in having an idea worth expressing, the imaginative ability needed to conceive of how, the technical skills needed to work effectively with some material, and the sensibilities needed to make the delicate adjustments that will give the forms the moving qualities that the best of them possess.*

Artists have learned to create forms that are intended to move us. The incarnations these forms can take are various. Even more, different forms appeal to different “parts” of ourselves. For example, the optical illusions of Josef Albers’s or Bridget Riley’s work appeal to the visual parts of our selves; the flowing nudes of Peter Paul Rubens and Pierre-Auguste Renoir appeal to our tactile selves; the fantastic Surrealist images of Salvador Dalí and Yves Tanguy play games with our mind and our sense of what is real; the Abstract Expressionism of Franz Kline and Jackson Pollock appeals to the swift power of gesture. Our involvement in these works speaks to us in different ways, and their messages evoke responses in different aspects of our being. In a sense, their form finds its echo in our soma.

Another quality that characterizes work of high artistic quality is that a perceiver can return to the work over and over again and still find qualities and relationships that continue to nurture; the work is not exhausted in a single glance. Of course, what nurtures is also dependent on who is doing the reading and looking, but, in general, the work’s capacity to delight, move, and surprise is a telling index of its artistic merit.

For children, the conscious realization that form can be managed to express feeling comes late in childhood. Although some scholars believe that very young children are naturally tuned in to such expressive qualities well before they enter school, there is no evidence that preschoolers can produce such forms on demand or that they know at a conscious level what they are doing when they do so. The development of the imagination, the technical skills, and the sensibilities needed to create aesthetic form is much—but not all—of what arts education is about.

The Exercise of Imagination

One important feature of the arts is that they provide not only permission but also encouragement to use one’s imagination as a source of content. Unlike in the sciences, where imagination is also of fundamental importance, in the arts there is a tradition that does not hold the artist responsible for “telling it like it is.” In the arts children, like adult artists, can pursue whimsy if they wish—the man’s hair can be blue; they can tell it like they want it to be.

Put another way, in the arts the individual can use materials to confer upon forms whatever suits his or her purposes without being accused of “distorting reality.”

It is ironic, but the enlargement of life through the arts is a powerful way to see what is lifelike. By making things larger than life or by recontextualizing them, reality, whatever it is, seems to be made more vivid. We sometimes say of a character in a play or film that he seemed larger than life. The imaginative image in such situations functions as a template by which we reorganize our perception of the world. We acquire new schemata. That, I think, is one of the reasons despots have regarded the arts as dangerous. The arts provide a platform for seeing things in ways other than they are normally seen. In so doing they help us wonder, “Why not?”

Writing about the power of the imagination to effect social change, Maxine Greene has this to say:

It may be the recovery of imagination that lessens the social paralysis we see around us and restores the sense that something can be done in the name of what is decent and humane. I am reaching toward an idea of imagination that brings an ethical concern to the fore, a concern that . . . has something to do with the community that ought to be in the making and the values that give it color and significance. My attention turns back to the importance of wide-awakeness, of awareness of what it is to be in the world. I am moved to recall the existential experience shared by so many and the associated longing to overcome somnolence and apathy in order to choose, to reach beyond.¹⁵

For those who want no change the arts and the imagination can cause trouble.

Learning to Frame the World from an Aesthetic Perspective

The world we live in can be seen in a variety of ways. Indeed, the process of socialization is, among other things, a means through which we learn to see the world within a common frame of reference; our frame shapes what we see. As I indicated earlier, most perceptual activities are instrumental in character; we see in order to use the content of sight to get somewhere else or to bring closure to an activity. We look for our house in order to know that we

have arrived home. Our seeing is practical, and practical perception is not usually designed to provide delight in what is seen, to challenge our beliefs, or to generate questions that lead to productive puzzlement. Most of what we do when we see does not have as its primary outcome a new way to view the world. The arts, however, do this with regularity.

What does it mean to view the world within a frame of reference? A frame of reference is a frame that defines a point of view. We see what we see within the terms the frame provides. Consider seeing not simply as the exploration of qualities, but as a "reading" of those qualities. A geologist looking at the Grand Canyon sees the striations of rock as proxies for evolutionary forces for which the color changes provide information for making geological inferences. It is by virtue of these differences in rock formation that the geologist is able to read the geological surface. Seeing is episodic; the geologist sees in terms of geologic interests.¹⁶ But the "same" rock formations are quite a different form of experience for the real estate agent, the poet, and the painter. The real estate agent reads the rock formation in terms of its property potential, the poet with respect to its lyric possibilities, the painter in terms of its potential for painting. Each person bringing a different frame of reference reads the so-called same image differently. Each reading is an interpretation that influences the kind of experience the individual will have.

The image for each of these people is not the same. What the rock formation is for each of them is determined not only by the rock, but by what they bring to it. Their frame of reference shapes what they will make of the rock. Part of what the arts provide are new ways of experiencing the rock.

Seeing the rock aesthetically, or hearing a wonderful piece of music, or experiencing a fine play is more than becoming aware of its qualities. It is a way of being moved, of finding out something about our own capacity to be moved; it is a way of exploring the deepest parts of our interior landscape. In its best moments it is a way of experiencing joy.

Joy is not a term that is used much in the context of education, but if the arts are about anything, they are about how they make

you feel in their presence—when you know how to read their form. The arts, when experienced in the fullness of our emotional life, are about becoming alive.

I suggested earlier that frames of reference make a huge difference in what we see. But even here there is a caveat. Although frames of reference provide an aperture through which we can secure a focus, every frame excludes as well as includes. To see the rock formation as a poet might mean that one will not be likely to see it, at least at the same time, as a geologist, painter, or real estate agent. As I said, a way of seeing is also a way of not seeing. Sense is made; it is not provided or discovered. What students are able to do with a situation is affected by what they bring to it, their frame of reference. And this brings us to the function of the curriculum and, more specifically, the function of the arts within the curriculum.

One such function is that the curriculum provides frames for reading the world. These frames, theories, concepts, images, and narratives parse the world in particular ways. Becoming socialized within a culture means acquiring these frames, for they allow you to join and participate in a discourse community, where discourse refers to the sharing of any form in which meaning is encoded and can be decoded. Common frames make a shared way of life possible.

Students acquire tools in the courses taken for making sense of the world. Educational programs that are effective both provide a variety of frames *and* develop the student's ability to shift frames. But what of the arts in this scheme? Specifically, what does work in the arts contribute to these frames?

The arts help students learn to pay attention to qualities and their expressive content. Attention to the particular qualities of, say, a rock is not a customary mode of perception, yet there is more beauty in a rock than any of us is likely to discover in a lifetime. Learning to see in the sense in which I am using the term here is learning to use a particular frame of reference. It requires, in some cases, a disregard for the label or function of the thing seen in order to pay attention to matters of form, that is, to the way qualities are configured.

But it is not only the formal elements or qualities of the thing

itself that need to be addressed, but the way these qualities generate expressive content. Put another way, it requires a willingness to allow the form to inform the way we feel when we see it. Sight, in this case, is put in the service of feeling. No teachers on the faculty of a school are more likely to address such matters than teachers of the arts.

The Ability to Transform Qualities of Experience into Speech and Text

Up to this point I have been speaking of forms of cognition that have to do with either the creation or the perception of visual form. Now I shift to another dimension, the forms of thinking that make it possible for the student to perform a feat that is usually so apparent that it is taken for granted. This feat is the ability to transform experience into its linguistic counterpart. This task—talking about art—is the job of critics and art historians, but it is done by all of us who wish to converse about what we have experienced. I use the word *experience* in this context rather than *see* because experience is wider than sight and because many visual works of art may begin with sight but can be rapidly transformed into non-visual forms of experience. For example, we can have tactile experience by looking at visual form. This process of experiencing in one sense modality qualities that are found in a different sensory modality is called synesthesia. For example, we can look at certain shapes in a painting and regard them as sharp or see an array of colors and describe them as soft. We can feel rhythmic sensations of a muscular sort in looking at paintings that seem to pulsate. In fact much of our experience is multisensory even when there is a dominant sensory modality. Music is not only auditory; it is tactile, sometimes visual, and it is tactile and visual in particular ways depending on the particular musical score we are listening to.

The transformation of what is experienced into speech or text can be addressed in different ways and at different levels. A student might see a painting, recognize the artist or genre, and assign it a date. A student might speak about the technique or materials used to make the work. Someone might discuss the theme that the work displays. All such aspects of the work are routinely addressed by critics, who in one way or another speak and write about works

at different levels of specificity and who focus on some (but not all) of what can be experienced. Knowing what to say, in part, requires knowing what to look for. However, for our purposes, I wish to focus on an aspect of speech and text that addresses a particularly elusive aspect of a visual form: its expressive content.

You will recall that I said that expressive content, a property that all form possesses, relates to the emotional character that pervades a particular work. To encounter a work and not to experience its expressive content is to miss the aesthetic features of the work. This does not mean that experiencing the expressive content of any particular work will be identical for all individuals. It cannot be, since experience is shaped not only by the work, but by what an individual brings to the work. Nevertheless, if the individual is open to the work, that is, if the individual allows himself or herself to “surrender” to the work, there will be some emotional yield. Experience will have some feelingful quality. It is this quality and the expressive character of the component qualities that are subject to linguistic transformation. Consider the following critical account by Harold Rosenberg as an example of a skilled critic’s attempt to render the qualities of a work through language.

Rothko had reduced painting to volume, tone, and color, with color as the vital element. His paintings, many of them huge and intended for display in public places, range from floating masses of tinted air, like influxes of breath, to closely packed slabs of dense, glowing pigment, resembling segments of metal or stone tablets that once carried inscriptions (the latter canvases reawaken the archaic overtones of Rothko’s submerged cities of the early forties). With the overall figuration kept intact from canvas to canvas, emotional content is determined by the hue, pitch, weight, and expansion and contraction of his oblongs of color, as these are affected by the shape and size of the whole. The psychic tensions evoked by Rothko are at once extreme and featureless, mythical without mythic personages or events. An upward drift, as of levitation or the weightlessness of grace, stimulates a flux of inhalation and opening out, and draws the spectator into the orbit of the artist’s inward flights. Materiality is overcome—at least, until the walls reassert their presence—an effect that has led some observers to speak of Rothko’s paintings as enveloping the onlooker or transforming his environment. In contrast, his brooding, dark, reddish-brown canvases,

which had emerged as early as the fifties but appeared more frequently, and growing blacker, in his last years, tower over the spectator in a blank foreboding, like ancient testaments kept intact in a shrine or a grove of some dour barbaric cult.¹⁷

This critical discourse is riddled with innuendo, metaphor, and simile. The critic tries to get at the expressive character of the work through suggestion. The linguistic transformation finds its roots in the neologisms that infants and preschoolers regularly concoct. "Ickey!" is in no English dictionary but leaves no doubt about the child's attitude toward what is placed before him. From neologisms, we move to vernacular poetry called slang. Slang is a way to use language so that it captures attention, marks one as a member of a particular group, and captures and conveys meaning that could not be expressed as well in ordinary vernacular.

In the context of art, language must at times be used in ways that express the ineffable. For example, when qualities that have particular expressive characteristics must find a poetic or metaphorical equivalent, language is used artistically. The way colors are laid on in a painting by Pierre Soulages might be described as "slurpy"; the word itself suggests an experience secured in other settings, and in so doing helps others experience a quality of Soulages's work that they might not otherwise see. Of course, to do this the student must first be able to experience the "slurpyness" in the painting and then be able to use language that captures its quality. This linguistic act is the product of a linguistic imagination. The attitude required to use language of this kind is one that eludes the limiting constraints of literalism in perception and allows one to enter the work emotionally. Again, in many ways it represents the ability to surrender to the qualities of the work one beholds.

This willingness to surrender to the work is an attitudinal characteristic of writers. The phenomenon surrendered to need not be a work of art. It can be a family, a city street, a carnival, in fact anything that one cares to address aesthetically. The writer starts the process of writing by seeing and by having an emotional response that is then transformed into words intended to capture the flavor

of that response. Thus, as I indicated in the previous chapter, the writer starts with vision and ends with words. The reader, however, starts with the writer's words and ends with vision. The circle is complete. Both painter and writer enlarge our awareness within the frames their work provides, and, I would argue, it is this expanded awareness that in turn enlarges our understanding of what the work addresses. If understanding can be conceived of as the enhanced experience of qualities so that relationships are noticed, relationships that confer upon component qualities a pervasive quality, then the arts, to the extent to which they expand such awareness, also enlarge human understanding. To be sure, the understanding I speak of is not theoretical understanding. It is a grasp of interacting relationships among distinctive qualities. When such seeing occurs it is epistemic.¹⁸

Thus, work in the arts, when it provides students with the challenge of talking about what they have seen, gives them opportunities, permission, and encouragement to use language in a way free from the strictures of literal description. This freedom is a way to liberate their emotions and their imagination. The opportunities to speak or write as I have discussed them are not only ways to describe what has been seen—though they are surely that; they are also a way of searching in order to see. The opportunity to talk about a visual field is also to imply a need to have something to say. It is this need that motivates search patterns in the work. Having a need to say, one looks more intently.

My focus thus far has been upon the use of speech and text as avenues to sight and as a means by which students learn how to use language imaginatively to describe felt qualities and to promote vision and advance understanding, their own vision and the vision of others. But language also has other, more conventional functions when it comes to the arts. One of those functions is to enable students to acquire an understanding of the relationship between the arts and culture over time.

One of the outcomes of arts education is the development of students' ability to understand art as a cultural artifact. How do the technology of a culture, the values that pervade it, the forms of art that preceded it influence the art at hand? How, for example, did

the return to the natural landscape by the Barbizon painters in the mid-nineteenth century in Europe influence the work of the Impressionists, and how did the work of the Impressionists influence the work of the Nabis, the Fauves, and the Cubists? Work in the arts—in any art field—should help students grasp general principles regarding cultural influences on the arts. This is not to suggest that students must come away from study of the arts with an encyclopedic grasp of the details of each period, but the principles are understandable, and the questions that give rise to them are powerful heuristic devices for putting art in context. These principles are teachable, learnable, and conceptual in form. In my view they ought to be a part of the curricular agenda.

Understanding art as a cultural artifact is by no means limited to historical material. Contemporary motorcycles and the features of a laptop computer are also influenced by cultural values, the technology that has been developed, and the way business is conducted. To understand why computers look the way they do, the impact of these factors must be taken into account.

So far in this chapter we have focused on *what* the arts teach. Now it is time to focus on *how* it shows. How shall we know if learning in the arts has occurred? What evidence do we look for? Where might it be located? Although in Chapter 8 we will be considering some of the methods through which the assessment of learning in the arts can occur in depth, there are some things we can say now.

HOW DOES LEARNING IN ART SHOW?

The most significant kind of learning in virtually any field creates a desire to pursue learning in that field when one doesn't have to. In this sense, the really important outcomes in education are located not within the school, but outside it. After all, schools will never have the time to do a comprehensive job of teaching all that can be known about any field of study. In any case, that is not the job to be done. The aim of the educational process inside schools is not to finish something, but to start something. It is not to cover the curriculum, but to uncover it. What one starts is an interest

that is sufficiently powerful to motivate students to pursue that interest outside school.

The dilemma for educators is that although this may seem a worthwhile aim, the likelihood of being able to observe students in nonschool settings using what they have learned in school is small. Hence, we make inferences from in-school behavior to how students behave elsewhere. How do students react to the visual world around them? With what level of interest do they take on tasks in the arts? Are they engaged? Do they seek out qualities in the environment in order to enhance their aesthetic experience? Arts education, when it is effective, has dispositional outcomes. It stimulates appetite. And it is appetite that ensures, if anything can be ensured, that what was begun in school will be continued outside it. All of this adds up to the importance of intrinsic satisfaction as an educational outcome. As long as extrinsic rewards provide the motives for action, action is likely to cease when the extrinsic rewards stop.

Another outcome of effective art education is the refinement of perception. Students who have been in an effective arts education program should have had their sensibilities refined. When it comes to visual qualities and their relationships, they should be able to see more, aesthetically speaking, than their peers who have not had the benefits of such a program. As I indicated earlier, arts education is about the development of sight in the service of feeling. One might say that arts education should foster the ability to carry on those fine-grained discriminations that constitute qualitative forms of inquiry.

But how can we know what such inquiry yields in the form of experience? We have no direct access to experience. We must use proxies for experience, and one such proxy is language. What are students able to say about what they look at? Or, put another way, what does their language tell us about what they see? Assessing the features of their language in relation to the work they comment upon is one avenue for learning what they have seen. This kind of assessment requires us to look at their language, the kind of similes and metaphors they use and, most important, the incisiveness of the comments they make to get at what appears essential to the work.

Related to the use of language I have described is the presence of another kind of language, a technical language, that provides an indication of the depth of the student's understanding of the work. To talk about "dry point," "underpainting," "chiaroscuro," "picture plane," or "negative space" is to reveal, when used appropriately, a grasp of features both technical and formal that the less well informed might not notice. Such cues give us some insight into the range of what students have learned.

An important data source for determining what students have learned is the artwork that students create. These works are potent sources of evidence regarding the outcomes of effective arts education when competence in qualitative reasoning is an educational aim.¹⁹ The works that students create can serve as proxies for their ability to think within the affordances and constraints of a material, to employ their imaginative abilities, to apply technical skills and, indeed, to use the various forms of thinking I have already described. The work is an expression, a representative of their ability to think intelligently about the perception and creation of the visual arts. If you want to know what students have learned in the visual arts, one way to find out is to look at their artwork and to compare it with their earlier efforts.

What about their aesthetic preferences? Can students give reasons for their appraisals and preferences of works they see and are invited to discuss? When they make comments about a work, how relevant are their comments to the work in question? What grounds do they use to support their judgments? What the arts teach shows when students are able to comment upon work that they experience and give reasons for the appraisals and interpretations they make. A program in arts education that nurtured such competencies would make it possible for students to provide experientially grounded justifications of their observations. Now we turn to an examination of what children learn when they engage in the visual arts.

5 DESCRIBING LEARNING IN THE VISUAL ARTS

CHILDREN, OF NECESSITY, DEVELOP FROM BOTH THE INSIDE OUT
AND THE OUTSIDE IN

If children's artwork is examined in social rather than in individual terms, it becomes apparent that what they learn when working on a painting or sculpture is not simply what they learn about dealing with a material; it is also a function of what they learn from others as they become members of a community. Social norms, models for behavior, opportunities to converse and share one's work with others are also opportunities to learn. This broad social conception of the sources of what, where, and how children learn, not only in the arts but in all areas, is referred to as *situated learning*; the child is situated in a social and material context, and this context, viewed as a culture, teaches. The cues students attend to and the priorities that guide them are influenced by that culture. The child belongs to a community of learners, in some ways like a member of a team, say, Little League, but without the pressured competitive climate that Little League suggests.

The situations in and through which children learn can be crafted by the teacher. When the situation *as a whole* is conducive to learning in the arts, positive outcomes are strengthened. This view of learning gives learning a social character; it departs from the more individual and often atomized conceptions of learning that have dominated much of educational psychology.¹ The theo-

retical roots of this social view of learning are thought to reside in the work done by Russian psychologists Lev Vygotsky and Alexander Luria, who were writing in the 1930s.² Although their research on the impact of the social context on the cognitive skills Russian peasants acquired was significant, even brilliant, they were not the first to discuss the importance of context. John Dewey preceded them. In 1901 Dewey wrote an article titled "The Educational Situation," in which he discussed the constructed character of experience.³ That construction was not only activated by the prior experience the child brought to the situation; it was also the result of the child's interactions with the social and material conditions in which he or she worked. In this view, learning and culture were inseparable.

Dewey's emphasis on the importance of creating communities of learners so that children could learn from each other was one of the hallmarks of good progressive education practices.⁴ Indeed, the opportunity to work in a group on common tasks was a way to help children not only to find practical meaning in academic ideas but also to learn what democratic life entails. Discussion and deliberation and consensus were a part of that life.

A vivid current example of situated learning is the Reggio Emilia program for preschoolers in Italy.⁵ The remarkable graphic work children in this program do is, in part, the result of what they call "work projects." These projects are thematically organized group investigations of, say, the construction of a building that they have visited, discussed, and then graphically portrayed. The drawings made then become the subject of further discussion. Discussing them prompts reflection, which leads the children to elaborate on what they initially created. In this process preschool children become members of a community effort in which this mode of collective and elaborated visual work becomes comfortable and familiar, one that the children know is taken seriously by their teachers.

In this view of the sources of learning, group activity is multisensory. Activities are diverse and dynamic in character, conditions change in unpredictable ways, and multitasking is common: there is more than one activity going on at a time, and students

learn to cope with this multiplicity of events, activities, and opportunities as a normal part of their school experience. Put another way, life in classrooms looks more like life in life! Learning situations are, one might say, "more real."

One of the potential virtues of situated learning is that it increases the probability that students will be able to apply what they have learned. When the conditions of learning are remote from the situations or tasks in which what is learned can be applied, the likelihood of application—or some would say transfer—is diminished. Although some students might be able to make connections on their own despite the remoteness of the relationship between what was taught and where it may be applied, that restricted reference group is not a good one on which to base curriculum design; what one wants is to increase the probability that connections will be made by all students. Teaching can facilitate such learning. The insular and often artificial circumstances of so many classroom activities decrease the likelihood that what is learned will be applied; and when what is learned cannot be applied, the meaningfulness of what is learned is diminished.

Taking this conception of learning seriously has substantial implications for teaching. Classrooms would look different than they do now, roles for students would differ, and students would use one another as resources. There would be a sense of community and cooperation, a shared enthusiasm in which the language of the field—in this case the language used to discuss the arts—would become the educational coin of the realm. The technical language related to the arts would become a shared mode of discourse. In some ways the climate and the discourse would be closer to the climate and discourse of groups that share a hobby or interest; discussion with peers around a common interest is a source of pleasure and a demonstration of competence. Students would take pleasure in sharing enthusiasms.

As important as this view of the conditions of learning in the arts may be, it is only one of the conditions that need to be considered to understand what and how children learn in the arts. Another of these conditions centers on what might be referred to as "the problem." By problem I mean a situation in which stu-

dents' existing conceptual and technical repertoires are inadequate for coping with what they confront, and as a result they are challenged to think in new ways about how to grapple with the problem. The students' inability to deal with the problem to their satisfaction motivates attention and experimental trial; they need, for example, to look hard at what they have created in order to see what is there, to make judgments about it, to use their skills to address it and to assess the results. It is in coping with the resolution of a dissatisfaction—the conversion of something less than satisfying into something that satisfies—that children learn from the activity. When there is no challenge, when everything is satisfactory, there may be little motivation to stretch one's thinking, to try something new, to experiment, to revise, to appraise, and to start again. Creativity profits from constraints. The problem is a major centerpiece by which learning is promoted. It is embedded in a social structure that can facilitate or impede its resolution.

Problems are nagging, they call for attention, they stimulate and motivate when their resolution *from the student's perspective* is possible. This qualification is important. If students believe their ability to address the problem successfully is nil, they will feel discouragement. If the problem is too easy, there is no problem. The art of teaching consists, in part, in knowing how to set problems within Vygotsky's "zone of proximal development," that cognitive space in which the problem posed is not so simple that the student feels no challenge nor so complex that the student feels there is no hope. Like attentive and intelligent parents, the good teacher knows when to intervene, how much guidance to provide, and when to back off.

But learning is seldom significant when it is limited to a one-time affair. The teacher who gives students clay one week, watercolors the next, wire for sculpture the third week, and linoleum printmaking the next, all in the name of providing a rich art curriculum, does those students no favor. What are needed are sequential opportunities to work on problems with one material, time to get a feel for that material, and time to learn how to cope with problems engendered by the material so that mastery is secured. Of course, mastery as such is eternally elusive—we never

really "master" anything—but developing sufficient skill that one's work can be brought under intelligent control is possible. Such a state of mastery is fostered by programs that not only expose children to a material but also provide the continuity children need to learn so they can use a material as a medium. This continuity is made most apparent in activities that promote the development of particular skills.

Consider once more how children become competent in Little League or in playing the piano. Competence in these activities is never treated as a one-shot affair; children work at them, they try to move up on the scale of performance, they are not treated casually, and they have models of excellence to guide them. In the visual arts in the context of schooling this continuity is all too rare. The richness of a visual arts program is too often equated with the number of different projects children complete. But even three- and four-year-olds are capable of sustained attention and elaborated work if adults show interest in what they do and provide opportunities for them to do sustained work. Sustained work promotes attention to the work in depth, taking the work seriously.

I have been talking about the need to provide sufficient time to students that they can develop the skills and the "feel" needed to work with a material intelligently. Time on task is not only an index of students' attention; it is also an index of the opportunity provided to learn how to deal with the problems they wish to address.

But there is another conception of time that needs to be recognized in the course of, say, painting, and that conception refers to matters of sequence. Recall our example of watercolor painting. Watercolorists think about their painting in terms of what must come first, what needs to be addressed before moving to a second layer of action. For example, light-colored backgrounds need to precede what will be painted over them. In creating a sculpture an armature may need to be made first so the rest of the sculpture can be built upon it. In the domain of cooking certain ingredients must be added before others, and so forth. Competence in a task often requires such sequential thinking. It makes intelligent planning possible, and often the sequence of such planning is so internalized by experienced workers that little conscious attention is devoted to it.

How shall we think about the modes of thought and the array of skills needed to work in artistically intelligent ways with a material? One way to think about the processes is to begin with sensory experience. I speak here of students' ability to experience and to interpret some aspect of the phenomenal world in which they live—the ability, for example, to notice the patterns of sunlight on a wall, or the countenance of a homeless person pushing an overloaded shopping cart down the street, or the cacophony of an urban thoroughfare. These subjects require awareness and interpretation to become candidates for artistic expression. They need to be seen or noticed, and they need to be interpreted. Sense, in both its meaning of qualitative experience and its meaning of making something meaningful, is the initial basis upon which a motive for a painting, poem, story, or dance might be created.

But experiences with phenomena that are meaningful in these two senses are necessary but not sufficient for doing meaningful work in the arts. For that to happen an idea must be framed: What does one want to “say” about what one has experienced? What is the point from which the work builds? Attention to such matters in classrooms is often neglected. One of the most important pedagogical tasks is to help students formulate something to say that matters to them. This “something to say,” paradoxically, may not be literally sayable. That is, it may not be translatable into words; but it can be felt, it can be experienced as an urge to express a feeling or emotion that gets clarified through the process of expression itself. Again, we return to Susanne Langer:

Whatever resists projection into the discursive form of language is, indeed, hard to hold in conception, and perhaps impossible to communicate, in the proper and strict sense of the word “communicate.” But fortunately our logical intuition, or form-perception, is really much more powerful than we commonly believe, and our knowledge—genuine knowledge, understanding—is considerably wider than our discourse. Even in the use of language, if we want to name something that is too new to have a name (e.g., a newly invented gadget or a newly discovered creature), or want to express a relationship for which there is no verb or other connective word, we resort to metaphor; we mention it or describe it as something else, something analogous. The principle of metaphor is simply the principle of say-

ing one thing and meaning another, and expecting to be understood to mean the other. A metaphor is not a language, it is an idea expressed by language, an idea that in its turn functions as a symbol to express something. It is not discursive and therefore does not really make a statement of the idea it conveys; but it formulates a new conception for our direct imaginative grasp.⁶

Awareness and idea are part of the process of meaningful artistic activity, but an idea needs a vehicle that will carry it forward, that will make it into an object or event that has a place in the world. To do this requires an imaginative leap into a form in which that transformation is to occur. What means, what form, what structure will convey or express the idea that has animated this process? Ideas that cannot be embodied through a medium are destined to remain in the cortex, a locale that is inaccessible to others and evanescent for oneself.

To say that an imaginative construction must be formed is to embody a purpose. Imagination provides the initiating conditions that make genuine purposes possible. But imaginative constructions and the plans developed from them should not be regarded as specifications or scripts; the act of expression is also an occasion for revising, even discovering and altering purposes. Put another way, purposes represented imaginatively are held flexibly. The worker not only speaks to the work; the work also speaks to the worker.

Talking about the need for an imaginative construction of an idea leads to another aspect of artistic expression, namely the need for technical skills. Even an imaginative construction held clearly in the mind's eye has no empirical life unless the student has the technical means for expressing it. As Dewey once commented, ideas need to be *compressed* if they are to be expressed.⁷ The artist distills the idea within the constraints and affordances of a material and in the process converts that material into a medium, a vehicle that mediates what the individual wishes to say. The use of technical skills is a way to treat a material so that the form created has an effect. No technical skills, no treatment. No treatment, no effect. Artists in any field work assiduously to acquire the techniques they need to create the effects they desire.

I have spoken of the various modes of thought and work in

artistic activity in discrete terms. In actuality, they are not discrete. Language is a way of making distinctions, and distinctions promote differences and separation. It is important to remember that these modes of thought are empirically inseparable. The senses feed ideas, and ideas focus one's senses. We find what we seek—and often more than we seek. At the same time imagination is moderated by what we believe we have the skills to create.

What we have is a complex, integrated, and mutually determining array of cognitive processes interacting. Language and the theories that are used to describe them are ways of highlighting these processes so they are inspectable. They are not intended to assign them an independent existence.

But what counts as learning in the arts? I wish now to focus on children's performance in the making or creation of an art form, in other words, doing the work of art.

WHAT CHILDREN DRAW AND WHY

What is going on when we see the changes in the images children draw? How do we account for them? Are they scribbles that have no intent? Are they marks that represent efforts to communicate? Are they the result of an unfolding genetically determined program? Are they the consequence of what children have learned by working with media? What do children's drawings mean? Indeed, do they mean anything?

These questions have different answers depending upon the theorist you read. For example, John Matthews believes that even infants have communicative intent and that this intent is partly the result of the bonding created in the parent-child relationship.⁸ Furthermore, Matthews believes the child's intent is expressed in a variety of ways: the medium for the child's expression may be graphic, or verbal (through cooing and other forms of infant "speech"), or manifested in body movements. In short, the expression of the child's intent is mediated by the medium. For young children the media are diverse. Matthews believes the expressions of infants are no less articulate than the expressions of those who have mastered speech. Looked at this way, the marks

and other images very young children make are forms of representation that Matthews believes need to be regarded as having content. Put another way, even infants are trying to say something through the actions, marks, and images they create.

Others look at the matter somewhat differently. For Rudolf Arnheim the course of children's graphic development is the result of a growing ability to perceptually differentiate the visual qualities of the world.⁹ As visual differentiation increases, children notice more and more within the visual field to which they attend. The growth of perceptual differentiation is accompanied by an increase in the differentiation of the drawings they create. Children create visual images within the constraints and affordances of the material with which they work. According to Arnheim children ingeniously create a *structural equivalent* in the material, one that corresponds structurally to what they are trying to portray. Thus, a tadpole figure that shows a body (which contains or encompasses a head) with two lines attached is for many three- and four-year-olds a satisfactory way to represent the human figure; it contains the essential elements, a head, a body, and legs. However, as children mature the pictures they draw become more differentiated, and in Western culture the desire to create convincing illusion sets in. The child of ten often wants to make a drawing of a cat so that it looks like a cat. What we have according to Arnheim is a gradual progression of perceptual differentiation as a normal aspect of the biocultural process and a corresponding inclination among children in the West to master illusion. The elementary school-aged child who has learned how to do that very well is often regarded as the class artist.

Arnheim is not suggesting that young children see the world in the way they draw it. What he is saying is that children's representations of a house, tree, or person are schematic, and these schematic images are not as differentiated as they will become as the children mature. As maturation proceeds, both perception and representation become refined. With experience using materials, technical controls are refined so that drawings reflect children's ability to create illusion. With these developments children acquire further tools for artistry.

Other theorists such as Rhoda Kellogg believe that in children's collective unconscious there reside a variety of symbolic forms, the mandala being a prime example, and that children intuitively create echoes of these forms in their graphic work.¹⁰ Following Jung's theories, Kellogg presents a picture of children's artistic development as an unfolding of a historical process that resides in their collective unconscious. The process of making art is one that unlocks the content of this collective unconscious.

Others such as Anna Kindler approach the graphic development of children from a view based in a postmodern conception of art. In this view modern aesthetic values, as contrasted with postmodern values, are brought into question as arbitrary values that need to be superseded by less prescriptive conceptions of what art is. For Kindler, the liberating features of postmodernism offer the possibility of a new agenda for art educators. The aim should be, according to Kindler, to take into account all of the representational forms children might employ, from maps, to drawings, to graffiti, to rap; the demise of art has created a new opportunity to redefine both development in art and the aims of the field of art education. Kindler writes:

The situation [today] clearly poses a challenge to the field of art education. It necessitates a reexamination of what art education should be in the "after the end of art" era to account for a variety of pictorial repertoires and visual languages reflecting the open texture of the concept of art. It offers opportunities to incorporate in art education realms of pictorial representation that have traditionally remained outside of its boundaries. It calls for re-evaluation of our understanding of the notion of artistic development and ways in which such growth should be encouraged and supported.¹¹

Kindler's argument opens up the content of art education, but while she has much to say about the semiotics of the image, the aesthetics of the image and what people have valued most about the arts get less attention.

What we see in these interpretations of the course of child development in the arts is that some theorists emphasize the connection they believe to exist between mark and meaning. For them, even newborns are purposive and create marks expressive

of their purposes. Others conceptualize children's art as a result of a process of differentiation in terms of both perception and representation. Still others believe that in the child's deep unconscious resides the intuitive knowledge of our cultural forebears. We all have a collective unconscious, and its manifestations are to be empirically found in the arts. Finally, there are those who emphasize the influence of our unexamined cultural values and assumptions in shaping our conception of children's art. They regard traditional conceptions as limiting and advocate a different perspective, one far more inclusive of what children can do with a wide variety of materials and gestures in the process of representation.

Just what do children create when they paint or draw? Are there age-related patterns or commonalities in the images they make? If so, what do they signify?

Let's start with an empirical description of the image making of very young children. Consider the five images shown in Plates 2 through 6. Plate 2 was made by a boy twenty-three months old. What is probably most striking about this image is the speed with which it was created. Children of this age often secure what might be called "action pleasure," a form of pleasure derived not only from the rapid movement of hand, arm, and wrist, but also from the visual properties that emerge from the action. In a sense, drawing becomes an event rather than an intentional effort to delineate the features of some object, situation, or person.

Although there is a vast conceptual difference between the work of the Abstract Expressionists and that of a twenty-nine-month-old, in both cases the surface to receive the paint, shape, or line is conceived of as an arena on which to act; the large gesture leaves its mark. In both cases the image may not convey any intentional content. In a certain sense, what emerges is another type of "found object." The act yields conditions for visual discovery.

Plates 3 and 4 show images drawn by the same child at twenty-nine months. Both display a tendency to slow down action a bit and to bring some degree of visual closure to the images drawn. The small arrowlike point at the top of the bottom left quadrant of Plate 2 was the starting point of the drawing. This response to a request to draw Mommy started out with focused attention on the

arrowlike beginning and then rapidly shifted into the broader armlike strokes that created the image as we see it.

The same conditions existed for the creation of Plate 3. In the left quadrant of the picture there is a heavier line, the starting point of the drawing. The child started slowly but then moved into broad quick strokes. It is likely that this child had not yet developed the schemata to create a structural equivalent for greater verisimilitude in the human figure. There is no necessary virtue in being able to produce images on paper that re-present the structural features, say, of a person, a house, or a tree. Yet the drawings that children make do provide an indication of the extent to which the ability to do so has developed at a given age.

Plates 5 and 6 are also responses to requests to draw a picture of Mommy and a picture of Daddy. Both drawings were made by a child four and a half years old.

What is telling is the similarity between the drawings. The shapes, the location, and the colors are virtually identical. In both cases the sky is up, the ground is down, the sun has five rays emanating from it, and the individual portrayed has a smile on his or her face. In both cases the proportions are approximately the same. The telling difference is located in the hair. This defining feature differentiates the image from its counterpart. Mommy clearly has long hair.

Whether Mommy actually has long hair is not the point here. This child has acquired a set of more or less standardized visual conventions for rendering people and up and down. She anchors the figures to the ground and puts the sun in the sky. Over time these images will become increasingly more differentiated. We shall see how these developmental features are rendered as we examine additional drawings.

If we look at the drawings—and, by analogy, the paintings—of children from birth to age fourteen, on average we will see a progression of images from marks to shapes, to the use of a baseline to anchor figures, to the use of location and the overlap of figures to portray depth, and, for some children, to the use of light and dark to create a sense of volume or roundness. Among the aims that interest children in our culture is the mastery of illusion,

a longstanding aspiration for Western artists, from Giotto in the fourteenth century to the beginnings of Impressionism around the third quarter of the nineteenth century, when what we call a self-conscious attention to abstraction began to emerge in the work of Cézanne, the Fauves, and, after the turn of the century, especially in Picasso's and Braque's Cubist paintings.

To say that an interest in abstraction began to develop in the 1880s with Cézanne is not to suggest that artists before that time were not interested in the abstract character of the forms with which they were working; the fact of the matter is that all artists must be concerned with such matters to do anything artistically worthwhile. What I am saying is that with the fourth quarter of the nineteenth century Western artists freed themselves from a concern with verisimilitude and redirected their efforts to exploring forms abstracted from the reality they had been interested in portraying in previous years.

Do preschool children display the same interests as, say, Jackson Pollock, or Pierre Soulages, or Mark Rothko? It seems to me that they do not. The work of abstract artists is directed by aims that preschool children are not developmentally able to conceptualize. This does not mean that preschoolers do not enjoy the viscosity of paint, or the brilliance of color, or the feel of moving a brush over a surface. Observations of their behavior while drawing and painting suggest that they do. But artists use abstraction to realize an idea, to resolve a visual image, to express an unspeakable notion. Artists are not simply movers of paint; even action painters like Franz Kline used action to serve an idea. The canvas was both an arena for discovery and a means through which their animating idea could take shape in public terms.¹²

Perhaps the most popular view of children's art is found in Viktor Lowenfeld's ideas about the stages through which children pass in the course of their graphic work.¹³ For Lowenfeld these stages, which are modal, age-related features, are the result of a genetically defined program that unfolds over the course of the child's life. Lowenfeld regards these stages as natural and believes that the function of drawings differs for children of different ages. The pedagogical implications of his views of children's art as an unfolding

process is for the teacher to play primarily a supportive role to the child and to let nature take its course.

Lowenfeld also points out that as children move into adolescence, personality factors or dispositions toward the expressive character of artwork begin to appear. He identifies two types of personalities or emphases in visual expression. One he calls *visual*, the other *haptic*. The former leads to work that emphasizes verisimilitude, the latter to work that emphasizes emotional expressiveness. In a sense the former is represented by visual realism, the latter by Expressionism. The disposition to one or the other is a consequence of the child's biological endowment rather than, say, the models of visual art the child has encountered or the expectations held for the child by significant adults. Lowenfeld writes:

We can now clearly distinguish two types both by the end products of their artistic activities and by their attitude toward their own experiences. When we investigate the artistic products of these two types, we find that the visual type starts from his environment, that he feels always a spectator, and that his intermediaries for experience are mainly the eyes. The other, the haptic type, is primarily concerned with his own body sensations and the subjective experiences in which he feels emotionally involved. . . . Furthermore, it was shown that the inability inspectively to notice visual objects is not always an inhibitory factor in creative activities. On the contrary, the very fact of not paying attention to visual impressions may become the basis of a specific creativeness of the haptic type. This is of greatest importance for art educators, especially for those who still are concerned with visual stimulations only.

A visually minded individual would be disturbed and inhibited were he to be stimulated only by means of haptic impressions—that is, were he asked not only to use sight, but to orientate himself only by means of touch, bodily feelings, muscular sensations, and kinesthetic fusions.¹⁴

What we have as we read the literature are theories of children's art that regard artistic development as directly related to children's desire to convey meaning, even for infants. We find theories that regard development as a product of the situations in which children work. We encounter theories of artistic development that hold that the images children generate are rooted in

their collective unconscious. We find theories of children's art that argue that the artworks children create are a function of the limited and limiting conception of art that modernism has imposed upon our schools and our society. We find theories that argue that the features of children's art are a function of a genetically unfolding program and biologically determined dispositions toward different styles of artwork. Perhaps the simplest though inadequate way to classify these theories is to divide them into those who argue that children develop primarily from the inside out, as contrasted with those who emphasize that they develop primarily from the outside in.

How shall we think about the changing features of children's art, and what, if anything, do their characteristics have to say about the relationship of the arts to the development of mind?

I spoke earlier of the "stages" through which works of art are realized. These stages include the ability to experience the qualitative world, to frame an idea or issue that the work is to address, to create an imaginative vehicle through which it is to be realized, and to use a technical repertoire that will make its realization possible within the constraints and affordances of a material. Each of these "stages" in the process of creation calls upon the use of mind; each requires the use of what might be called—a bit too narrowly—cognitive skills. The argument I intend to develop here is that the ways in which children express themselves in the visual arts depend upon the cognitive abilities they have acquired and that the cognitive abilities they have acquired are related to both their biologically conferred and their learned abilities as these human features interact with the situation in which they work. Human performance in the arts is the offspring of a dynamic medley of interacting features: development, situation, and the cognitive abilities the child has acquired as a result of this interaction. The process of education, whether in the arts or elsewhere, is promoted by teachers as they design the situations in and through which the growth of such abilities is advanced.

Consider once again the ability to read the qualitative environment. Readings are of many kinds, depending on the lens through which the world is viewed. Frame of reference matters;

frames influence both what will be seen and what will be made of what is seen. To look at the Golden Gate Bridge from the perspective of an engineer leads us to notice features relevant to the engineering marvel that it is. To see the bridge as a poet might is to confer or recover meaning from that bridge that is disclosed by the values the poet brings to the bridge as those values are expressed or embodied in a poem. To see the bridge as a painter might is to attend to relationships of form that can be made palpable or expressible in a painting. Meanings are made; interpretations are construed by the engineer, the poet, and the painter as each uses particular frames with which to attend. Seeing is a selective activity shaped by the frameworks that serve as screens in our consciousness.

Consciousness is the product of attention, and attention is guided by past experience and moderated by current need or purpose. Consciousness is also a form of awareness, and awareness is fed initially by sensibility. Thus, sensibility is the mother of consciousness and provides the content for reflection, analysis, and the making of connections. Because consciousness depends initially on sensibility, the refinement of the senses is of prime importance. We cannot write or paint about what we have not noticed, if “only” imaginatively. Arts education has a major role to play in creating situations through which the senses can be refined.

The refinement of sensibility profits from learning how to attend. It profits from an ability to compare and contrast. It profits from discussion with others about what is being displayed. It profits from knowledge of the context in which a particular form, process, or object resides. Knowing something about context enables us to search more efficiently for what is there. Think of a skilled mechanic diagnosing a malfunction in an automobile or a radiologist inspecting an x ray. It helps to know what to listen or look for.

In the context of appreciation such processes might be sufficient. In the context of creation they are not. In the context of creation an idea needs to be formed; something must be created that gives point to the work to be done. Put another way, the person needs to have something to express, something to achieve, something to say. For Monet it was the countenance of light, for Picasso

during his Cubist period the interaction of space and time, for the Senufo carvers the call and veneration of their ancestors, for Bridget Riley or Agnes Martin how optical illusions affect our visual field. Each of these artists worked toward something; their work was purposeful, but even work that is purposeful requires more than an aspiration or aim; it needs a vehicle. The artist, child or adult, must envision and invent a means through which purpose is made real in material form. It is here, in the context of one's work, that invention occurs.

Consider architecture. How does one design a building, say, a museum in which precision and proportion reach an ultimate level of refinement? I. M. Pei addressed this problem in the design for the National Gallery in Washington, D.C. How does one create a sense of movement in an object that is stationary? The Futurists did it, and so did the designer of the Ferrari. Each of these solutions depended upon someone's ability to imagine possibilities that could resolve the problem posed. Each imaginative solution is a solution to a problem, the realization of an aim. But not quite.

Solutions in the context of the imagination are one thing; solutions in the context of the world in which we live are something else, and for those kinds of solutions we need to have the knowledge and technical skills to convert what appears in the mind's eye into something having material existence. And to do this we need to be able to think within a medium. Thinking within a medium entails a subtle appreciation for the potentialities of a material and the kinds of moves we need to make for those potentialities to be made actual. For example, an individual doing an oil painting may want to create a certain translucency on the surface of the canvas. This might require the application of a particular opaque color directly on a primed canvas, followed by several layers of transparent color. The extent to which the artist's aspirations are realized will be significantly influenced by the individual's knowledge and technical repertoire.

The use of technical skills is not the mindless application of routine habits. At times techniques themselves must be invented to convey ideas, ideas that, at the time, cannot be served by existing techniques. The fourteenth-century achievement of perspective

tive was a technical breakthrough intended to convey more powerfully ideas about religious beliefs. Perspective was no mere accident or decorative flourish; it served a critically important social and religious function.¹⁵ It made religious stories more compelling.

It is relatively easy to regard technique as a kind of habitual motor skill. In some respect this vision of technique as habit is accurate. Many techniques are often so overlearned that they require for their successful application little or no conscious attention. Reflect for a moment on the use of a computer keyboard. If we need to think about the location of each of the keys in the course of writing, the probability of our being able to focus on the content to be expressed is diminished. We can walk easily for miles without conscious attention to our feet except on those roadways strewn with rocks, slopes, and debris that can cause injury. In other words, we attend to techniques only when the ones we have prove inadequate in enabling us to cope with a situation.

In the context of making art, the application of a repertoire of technical skills does not operate independently of other features of artistic competence. Children, like adults, eventually need to learn how to pay attention to qualitative relationships that unfold in the course of action. They must notice the weight of the tip of the brush charged with paint in order to estimate the consequences of a stroke when applied to paper. They must eventually learn that if a sheet of watercolor paper is sponged with water before the paint is applied, there is only a certain amount of time that can go by before it dries, thus undermining the effects they seek. When we consider the techniques needed to use video, film, and the computer effectively for artistic purposes, the significant role of techniques looms large indeed. In short, a technique is guided by aesthetic considerations.

I have spoken of techniques largely in terms of attention to qualities and to certain kinds of performances. However, the successful application of techniques is also monitored and managed by linguistic skills. One of the important functions of language is that we can play out our options mentally within language before taking actual action. We can, through a process called self-regulation, run through intended activities, rehearse certain choices, de-

scribe and analyze to ourselves the various pathways we can take toward the resolution of a qualitative problem. Although I have described the stages of artistic activity as independent processes, I want to emphasize again that these processes interact and that it is only because of the constraints of the language I must use to write this discussion that the distinctions among the stages are made.

SUMMING UP SO FAR

The course of children's development in the creation of visual images is characterized by the gradual emergence and refinement of forms of thinking. What we see in the features of children's artwork over time are the fruits of learning. Such learning is promoted by teachers and others as they provide children with opportunities to experience the world qualitatively, as they provide children with materials with which they can work, as they offer guidance, examples, prompts, and assistance in ways that foster learning in the context of the visual arts. The forms of learning that are promoted pertain not only to the refinement of their sensibilities but also, when the arts are well taught, to the array of cognitive processes I identified earlier. These include the means they are able to imagine to carry their ideas forward and the acquisition and application of techniques that enable them to realize their artistic ambitions within a material. In the process the material becomes a medium, for it mediates their aims.

I have suggested that aims always come first and that means follow. But in fact aims, purposes, and ideas not only precede action; they often follow it. The material itself becomes a source of suggestive ideation. The qualitative exploration of a material can generate new ideas or aims. Thus, these processes are better thought of as a form of dialogue, a mode of conversation with the material rather than a monologue directed solely by the artist to a compliant material. This dialogic process not only may result in an artistically attractive image, but also has consequences for the child. These consequences pertain to the ways in which the exploration of material in the service of an idea becomes a way to sensitize and to discover the contours of one's interior landscape.

We learn how to feel what we have seen, for it is in the arts that a special level of focused attention is realized, a form of attention that is seldom called upon in most of the situations we experience. The arts invite—no, demand—that we attend sensitively to the qualitative arrays that we ourselves generate. They ask us to notice our own emotional response to these changing arrays of quality. The arts help us become aware of ourselves. Indeed, at their best we use the arts to remake ourselves.

THE ARTWORK OF THE YOUNG

Students of children's art point out that there are competing theories attempting to explain its changing features.¹⁶ One of these theories claims that children draw what they see, not what they know, while the other theory claims just the opposite: children draw what they know, not what they see. To draw what they know, children pay attention not to the visual features of the object to be drawn, but to their conception of that object: children know that a hand has five fingers and that a house has windows and make sure these things are present in their drawings. Those drawings are likely to be schematic or simplified and serve as iconomically defined representations of aspects of the visual world. For children interested in the didactic use of the image—a use that is intended to signify or convey an idea or story rather than to replicate something's visual features—drawing what one knows is the most efficient approach to graphic representation.

A competing view argues that children draw what they see, not what they know. The perception of young children is thought to be less detailed, more global, more generalized, and it is these generalized perceptions that emerge in the drawings children make. Children draw images that tend not to replicate the detailed proportional features of the visual world because, it is argued, they tend to see the world in less differentiated ways.

Reconciliation of these two seemingly competing theories is possible by moving in exactly the opposite direction. *Visual realism*, the tendency for children to draw what they see rather than what they know, presupposes that seeing makes no use of knowing. Yet

the objects and events of the world are known through many sensory modalities, and each contributes to children's awareness of the features of the object to be drawn. It is this awareness that manifests itself in children's graphic representations.

Intellectual realism and visual realism are not competing concepts or theories; they represent two sides of the same coin. Children cannot know what they cannot see, and they cannot see without knowing, for seeing itself is a way of knowing.

If this theoretical reconciliation of two seemingly competing conceptions exhausted our explanation of the features of children's work, the task of explanation would be relatively simple. However, children draw not only what they see and know but also what they imagine. Children draw what they imagine by generating images that never existed in the "real" world but that are possible in the world of the imagination; winged horses, centaurs, *Star Wars*-like images, purple cats, and the like. Imagination is not fettered by visual realism, and for many young children it is a rich source of imagery for drawing, for stories, for dance.

Children draw not only what they imagine, see, and know but also what they feel. How they feel about a particular object, person, or event is reflected in the way they treat it in a drawing. What is important is often exaggerated, what is important is often made more visible, what is important secures a prominence on the paper that confers on it the significance they want to express.

How children treat the material and the features of the images they create is related to, but not determined by, their intentions. Intention—when shaped by the imagination—is the mother of invention. If the child is interested in storytelling, simplified graphic descriptors of events, objects, and people may well be sufficient to get the message across. If the child is interested in expressing or communicating feelings about those events, then other features of the work need to be handled so that they express the desire to represent such feelings.

Put more simply, purpose helps define the way in which an image will be handled. Of course, how an image is handled is not only a function of purpose; it is also related to children's technical repertoire for making such representation possible. What is needed

in any of the arts is not only a conception of artistic possibility, but a performance repertoire that enables those possibilities to be actualized within a material.

The paper on which children work serves as the arena in which their graphic representations emerge. One of the important features of this workspace, as Jonathan Matthews points out, is that it provides for immediate feedback. Graphic visual images, unlike speech, *stick*; they remain visible and can be worked upon. One can inspect them; one can make alterations and then make comparisons among the alterations made. The workspace that children employ is a kind of laboratory for their efforts. This laboratory makes it possible for children to find out what happens when one thing, rather than another, is done.

In designing graphic forms on paper, children move from a simplified repertoire that manifests itself in arcs and circles, to forms that are very much related to the mechanics of the arm, wrist, and hand. Over time children acquire additional graphic skills that lead to the creation of circles and, later still, to lines attached to them. Children, in effect, move from the linear form to a closed form and from a closed form to a closed form with appendages. There is a kind of right-angledness to the connections made to a core visual form. This emerging repertoire gives a substance to the drawing that transforms lines into objects. The core and radial become a basic visual feature of the growing graphic repertoire.

As children mature, each of these repertorial acquisitions becomes an integrated part of subsequent repertoires. Thus, children's development in art can be seen as an expanding collection of increasingly refined and diversified repertoires that widen their visual options.

When a child wishes to represent, say, a table, the perspective or position from which it is drawn is one that is the most indicative of the table's visual features. For example, the child is not likely to draw a table from a top-down perspective; the table is most likely to be drawn from a side view in order to reveal the table's most telling visual features, the profile. The same is true with respect to the drawing of the human figure. It is most usually

PLATES



PLATE 1a. Georgia O'Keeffe, *Red Poppy*, 1927, oil on canvas, 7 × 9 in. Private collection, Geneva, Switzerland



PLATE 1b



PLATE 1c



PLATE 1d



PLATE 2



PLATE 3



PLATE 4

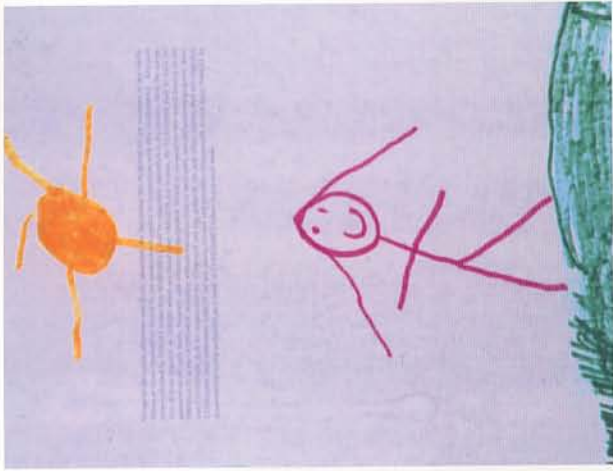


PLATE 5

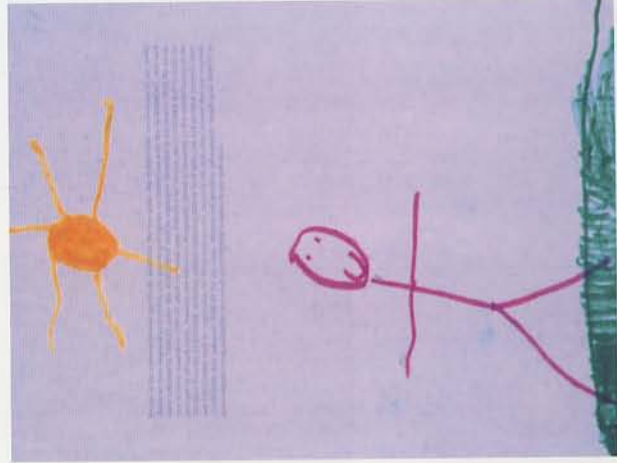


PLATE 6



PLATE 7



PLATE 8

portrayed frontally and symmetrically; no three-quarter or back view is typically present in children's drawings until quite late in their development, and only when they have the technical competence to render them. Thus, children are in a process of inventing repertoires through which their intentions can be executed on paper within the limits of paint, pencil, or any other graphic tool. As they get older this repertoire expands, and the choices that they can make expand with them. Thus growth in the visual arts, as in other fields, can be regarded as an increasing expansion of the means through which the contents of the human imagination can be given a public form.

Let's return to some of the features of children's artwork. What we notice in the drawings of children from, say, ages two to four is a rhythmic activity of crayon on paper or the pounding patterns of fist on clay. We notice that children attend both to the action and to the emerging images and depart from them. The process appears to be aimed at the sheer enjoyment of movement with the material and noticing the visual consequences of those movements. At this age children are developing a sense of personal agency. At about three and four years, children sometimes give names to the markings after they are made: this is Daddy, this is Mommy. Still later intentions are articulated before the action. This is a significant cognitive development; the child begins to discover that one thing can stand for another. The work begins to function as a symbol.

Another notable feature of the paintings and drawings of children under four and a half is the experimental attitude they display toward imagemaking. A large percentage of children from two to five years act and then see what happens as a result. At other times there is a clear intention to be realized. A child, for example, may want to draw a person doing something in a garden. The efforts made are intended to create an image of a person standing amidst flowers. In such circumstances, the function of the imagemaking is largely didactic: it is intended to tell a story, to convey a particular idea. To be sure, aesthetic considerations go into the selection of color and the ways in which the picture is organized; but its most important feature is the effort to communicate.

At other times, children's efforts are directed toward what might be called an Expressionist orientation: action precedes purpose, and the results of action provide the opportunities for choice. Action also provides an opportunity to escape from the literal and to engage in a process that makes it possible to "see what happens." In the didactic or narrative aspect of imagemaking, children aged four to four and a half may well employ a variety of schematic images that are already a part of their visual drawing repertoire. For example, they may produce schematized images of a face, a body, a sun, mountains, a house, flowers, clouds, birds, and so forth. These schematized images are then combined; they are composed in order to display the narrative the child wishes the picture to tell.

There is often an interior dialogue going on in relation to the imagemaking process. It is not uncommon for preschoolers to speak to themselves in the midst of painting, giving directions, making choices, telling stories. Often we find children gurgling or making other sounds in tandem with painting. The painting is a kind of accompaniment to the sounds, or vice versa. What such activities reveal is an immersion in the process. This immersion is both visual and kinesthetic. The rhythmic action of the hand and the arm, the sense of viscosity that flows from the brush, the visual surprises that such activities often yield create a dialogue or conversation between the child and the work. The child acts, the work speaks, the child answers, the image takes on a new configuration that leads to a change in the conversation. There is, as Mikhail Bakhtin might say, "a dialogic imagination" at work.¹⁷

Watching preschoolers even as young as two and a half and three reveals a capacity for intense focus during their work. They often lose themselves in their activity, a condition that Dewey regards as central to aesthetic experience. Rather than seeing a short attention span, we often observe just the opposite.

The materials that are made available to preschoolers—colored pencils, clay, paint, colored chalks—possess distinctive characteristics, and these characteristics affect the choices that children make and the images that emerge. Thus, selecting materials is an important way of influencing the kind of thinking children are

likely to do. A pointed pencil makes images possible that could not be easily rendered in paint. Conversely, the spontaneous expressiveness possible in the act of painting is more difficult to achieve with a pointed pencil. The pencil invites delineation; a wide brush and thick paint foster expressiveness. Thus, materials matter because they influence what children can think about and how they are likely to engage the work.

When children have substantial experience with paint and brush, even when they are under four, they develop a refined sense of control over it. They not only can control the brush in an impressive way; they often experiment with its limits. This experimentation leads to the appropriation of new schemata, that is, images they did not previously have but that they can use in the course of their painting. In a word, they learn. They create the conditions that promote their own learning by acting upon their work in novel ways.

Perhaps one of the most ubiquitous features of the imagemaking of preschool children is their ability to decide when they are finished. The children are in control. When children are learning to spell, the tacit expectation is that they have finished when they have spelled the word correctly. In spelling as in arithmetic, being finished is not simply a termination of one's work, but an arrival at something close to a correct answer. Similar conditions are not so prevalent in the visual arts. The latitude for choosing when one has finished is considerably wider. In fact that choice never leaves artists and their work; adult artists always ultimately decide when they are finished, and so, too, do children.

When young children, preschoolers for example, work, there is much peripheral learning, that is, learning through the observation of and socialization with others. Teachers also teach in peripheral ways. They demonstrate. Demonstrations promote try-outs by toddlers. All of this often takes place in a variety of "work stations" at which children can explore a wide variety of materials and projects. Their engagement in these projects is governed not by clock time, but by body time. Their interest defines how long they will work at a station. During their stay, teaching is largely

opportunistic, but in the professionally run nursery school, teaching is related to a developmental frame of reference. In other words, opportunism is guided by theory as well as by instinct.

We often see children engaged in making repetitive circles and lines, an activity that is often without direct eye contact in relation to the circles or lines being made. Motor repetition is sufficient. "Control" is kinesthetic rather than visual. Children as young as two and a half often develop remarkable levels of control over the media and tools they use. Even when they are unable to display compelling verisimilitude in their drawing, it is clear that their control of the materials is impressive. Graphic skills, for example, develop whether or not verisimilitude has been achieved.

The social setting in which preschoolers work is also an extremely significant resource for their educational development. Six children around a small square table provide many opportunities for peripheral learning; children function as models for one another. The models pertain not only to imagemaking, but to conversation and to the exercise of imaginative play.

We often see teachers demonstrating and children cutting, pasting, painting, drawing. Often they occupy a multimedia universe while working on a project. This multimedia universe encompasses verbal communication, graphic expression, acting, singing, and the other forms of activity that children not constrained by adult restrictions are able to explore in the context of a single project. In this context the selection of particular methods and tools evokes and refines different skills and encourages different modes of thought. The child with a pencil in his or her hand works within constraints and affordances far different from those he or she would have working on an upright easel with a wide bristle brush using thick paint. Thus, choices about which materials and tools children will use are also choices about the kind of thinking that will be promoted. The resource-rich nursery school is a kind of educational cornucopia; children interact socially at will, attend and stay at will; teachers talk and respond at will. Interest drives the work.

Studies of nursery schools show that children aged four and a half develop substantial control over the tools they are given an opportunity to use. Some can handle eye droppers to distribute

colored ink over a damp paper with extraordinary precision. The resulting images are often reminiscent of the stained canvases of Morris Louis or Helen Frankenthaler. Using such materials and speaking to the child using them, a teacher comments, "That's a beautiful thing you're making." Still at work, the child responds, "It's a butterfly." The relationship to abstract painting is obvious. The child has displayed the essential structural features of the butterfly through the bleeding and intensity of the colored inks being used on a damp paper.

The well-stocked nursery school is filled with resources for creative play such as drama, and tools such as drills, hammers, and saws, with which children develop skills and use to build. The tasks are far from bookish, although language in its written and spoken form is by no means unattended to. Given this dynamic context, the task of teaching might be described as knowing when not to intervene. It may be the withholding of intervention that sustains the child's interest in his or her activities. In such circumstances, there is nothing coercive about what a teacher expects a child to do. And of course this leads to the question of when and why education becomes somber when children enter grade school. In preschool, imagination and exploration are prevalent modes of being in this world. This being in the world includes tucking in and tucking out of reality as a part of the life of a four-year-old. Perhaps such a life cannot be led when one is seven. Although, I am not so sure.

From approximately four years of age children develop an interest in what might be regarded as the didactic use of images; that is, they use images drawn on a sheet of paper to tell a story. One of the primary functions of the drawing at this age is to convey a kind of visual narrative. Some writers such as Jessica Davis claim that aesthetic considerations dominate from ages four to seven, that expressiveness and spontaneity characterize children's drawings and paintings in ways that seem to be lost between age eight and adolescence. According to Davis, middle school-aged children's preoccupations with realism and narrative redirect their attention in ways that thwart the brilliance and spontaneity of preschool children's artwork. She believes that the images preschoolers cre-

ate suggest that they are making aesthetic decisions and are closer in spirit to adult artists than they are to children nine to twelve years of age. Davis writes:

What emerges from these observations of artistic thinking in the symbol system of drawing is the view of a course of development quite different from the hierarchical progressions advanced by Piaget. In Piaget's structure, the young child is at the bottom of a steep linear ascent to the pinnacle of thought represented by mature exemplars. With young children producing drawings that seem similar to the work of professional artists, and children in that facility, the course of development in graphic symbolization looks more like a "U."¹⁸

For Davis the bottom of the "U" represents the low level of aesthetic interest in middle childhood, while preschoolers and adolescents have a keen interest in aesthetic matters.

Children may create work whose qualities they themselves may not appreciate or even recognize. A bold sunflower may have the attractiveness of a van Gogh to a sensitive adult, but to a preschool child it may simply be the result of another enjoyable activity with paint or clay. We seldom see preschoolers looking at their own work from a distance in order to do the visual editing that would enhance their work. The paper on which preschool children paint may represent more of an arena for making a gesture that leaves a visual residue than an occasion for creating an image that they intend to have aesthetic properties.

Some of the roles of art education are to enable youngsters to learn how to attend to the qualities they create, to promote through the design of an educative environment an appetite for creating visual images, and to enable them to secure in a developmentally appropriate way the skills that will enable them to work effectively with the material.

In a modest way, nursery school teachers already teach preschoolers technical skills, if only to enable them to learn how to wipe the black paint off their brushes before putting them into white tempera jars. A small bit of technology, but an important one.

Children between four and seven will often emphasize through size relationships in a drawing or painting that are important to

them; their emotional attachment to an individual or the significance that something has to them is reflected in the size of the images they make. The feeling and significance of something for children of this age swamp the aspiration to create visual verisimilitude.

Another feature of the artwork of children between four and seven is that they often focus on each entity drawn without paying much attention to the relationships among them. Instead of looking at relationships, they have local visual solutions. Local solutions do not take into account context; the young child wants the cookie now, even though dinner is five minutes away. Objects are drawn as if occupying their own space, largely independent of the visual field they share with other forms. One of the aims of art education is to help children learn to notice the expressive quality of relationships. Through good art teaching, students learn to compare relationships and to rely upon somatic knowledge, the bodily feel of a rightness of fit for making adjustments in what has been composed. The ability to experience such relationships is the result of developed thinking skills. These are skills that even many adults have not developed in the visual arts.

I have been describing the forms of learning that work in the arts promotes. Most of my comments have pertained to either the perception or the creation of visual form—the drawings, the paintings, the sculptures that children and adolescents create. But what matters with respect to learning in the arts is wider than matters of perception and creation, as significant as they are. As I indicated in Chapter 2 in relation to visions and versions of art education, there is more than one vision and more than one version of what matters. For me, the benefits of art education extend not only to a heightened sensitivity to expressive form, but also to the ability to discuss and to describe expressive form and the promotion of students' understanding of the social context—its values, its technology, its culture—that gave rise to the work itself.

Consider what must be learned in order to describe in a constructively critical way the qualities of a painting or sculpture. Any individual undertaking this feat has the difficult task of noticing what is subtle but significant, experiencing what is expressive about the work, and then finding the words that somehow trans-

form what has been visually experienced into a kind of linguistic equivalent. Of course, there never is an exact equivalent between one form of representation and another. Yet we are able through our capacity to perceive relationships, analogies if you will, to use language to describe and interpret qualities that have no literal equivalents.

For example, when a child calls a form “squishy,” even though it is not literally squishy, a particular allusion is being conveyed. And when an adult describes the ways in which in a particular composition a curve is repeated, relationships are noticed that may not be obvious. To see art one needs to see beyond what is immediately apparent. As David Perkins might say, one needs to be intelligently reflective about the work; one needs to be able to see the unseeable.¹⁹ Thus, programs in arts education can foster opportunities to students to learn how to use language figuratively, to somehow capture what cannot be said literally. Such linguistic skills get at what Aristotle thought was among the most profound of human capacities, the ability to create metaphor. The American art historian and art critic Leo Steinberg once commented that critics do not merely describe the work before them; they *render* its qualities through innuendo. The conceptual path to the work is indirect rather than direct.²⁰

In our schools, literally oriented as they tend to be and often preoccupied with fealty to rule and procedure, such opportunities are especially valuable. They feed both feeling and the life of the imagination; they address what is sensuous and often subtle. Arts education, when well done, calls students’ attention to the distinctive qualities of the particular.

Although I have emphasized discourse pertaining to the arts, visual qualities of all kinds can be addressed in the modes I have described. Reflections on a car’s windshield are no less objects for apt linguistic description than Gilbert Stuart’s portrait of George Washington or Mary Cassatt’s picture of a mother bathing her child. The visual world that surrounds us provides an unlimited array of candidates for aesthetic attention. When arts education is done well, the frame of reference students learn to use and the subject matters to which they attend are not only subtle; they are

broad. We certainly do *not* want to promote the idea that the sensibilities cultivated and the language we use to describe what the sensibilities make available are restricted to objects incarcerated in museums, concert halls, and theaters. Our aspirations are substantially wider.

Those who have focused on the critical analysis of works of art have developed an array of categories through which artwork can be addressed. Critics not only attempt to capture in language the qualitative forms of life that works of art help make possible; they also attempt to interpret the meaning of those works. That is, they attempt to reveal what they signify. Interpretation is a process of sensemaking and often requires a deep understanding of the context in which the work was made, the position and background of the artist, the meanings of iconography that were used, and the technical means employed to create the image. Interpretation is an effort to penetrate the surface features of the work in order to construe meanings that would otherwise not be available.

In addition to interpretation, critics almost always make judgments about the quality of the work. Such judgments are statements about the merits of what has been seen, not statements about matters of preference. Judgments, such as “I think this is a good piece of work,” can be debated. Preferences, such as “I like this painting,” are not debatable; they are matters of choice.

Learning in the arts not only can enable students to use the metaphorical forms of expression I described earlier; it also can encourage students to seek the meaning or significance that works have. Such a search goes well beyond exclamations of preference into the deeper questions of justified judgment, even when differences in judgment cannot be resolved. Learning in the arts promotes these modes of thought as well—at least when the arts are well taught.

The focus I have just described is on the qualities of works of art and works of nature and culture more broadly speaking. I have been talking about what might be called critical discourse. Works of art reside within a culture, and cultures occupy locations in space; thus they are a part of our geography. They are not only a part of geography; they are a part of human history. Experience

with works of art is enhanced when students understand the context in which the work was created. The values that animated fourteenth-century monks creating icons for village churches participate in a worldview that is reflected in their work. Understanding this worldview can enrich one's experience with the work. The position of the church in Italy in the fifteenth and sixteenth centuries made possible the kinds of images that Michelangelo, Titian, and others painted. The availability of resources and the desire for works displaying status and position contributed significantly to the kind of images that were painted. Indeed, one could argue that the church made possible the work itself; we are its beneficiaries.

My point is that one of the important contributions of arts education is to enlarge the appreciation of the cultural and social context in which artists did their work. It matters not whether the work was done in China during the sixteenth century, in the third century in Nyarit, in the Congo of the early twentieth century, or in western Persia during the second millennium. All these locales and cultures influenced artists, and, just as assuredly, the art and artists during those periods influenced the cultures in which they lived. Thus, when we consider the affordances and constraints that arts education provides, it becomes clear that we ourselves define them, depending upon the values we wish to achieve.

I have proposed that arts education programs not only pay attention to the forms of thinking that make sensitive and imaginative imagemaking possible, that they not only cultivate the forms of perception that enable students to read the qualities of the visual world, but also promote students' abilities to describe those qualities intelligently. This discourse is often punctuated by the metaphorical and literary use of language.

I have argued here and elsewhere that students should come to understand art as a cultural artifact, one that both reflects and affects the culture in which it appears. Artists, through their work, can change our way of seeing. They can influence what we regard as art; they can challenge us in special ways to think about how those relationships influence our experience. Artists, like scientists, are often troublemakers, and the trouble that they make is

that their work confronts our customary modes of seeing and challenges us to think afresh about how aspects of the world might be experienced.

LOOKING AT STUDENT ARTWORK

We return now to a reexamination of drawings and paintings made by children from primary grades through secondary school. What are the features of their images? Why do they draw the way they do? Consider the drawing in Plate 2. You will recall that it was made by a child twenty-three months old. What we see here is an image that records the swift, repetitive movement of the child's arm. I believe it is likely that the child is focused more on the stimulation received from seeing what happens when action of this sort is performed than on the desire to create an image that represents something in his visual experience. There is for children of this age a certain pleasure in action, and when action also leaves a visual residue, as this one does, the pleasure is intensified. Out of such action come visual discoveries such as the ability to create not only lines but shapes. In Plate 2 the visual closure needed to create shapes has begun to emerge.

Plate 3 displays not only closed forms but also a change in the scale of the images within the larger whole. These accidental variations provide the conditions through which the child acquires the graphic repertoire needed later to make images that are recognizable.

Plate 4 even more than Plate 3 presents us with a closed form. It is likely that this closed form was an accidental image rather than the result of intention. The child who made the images in Plates 3 and 4 is the same child who made the image in Plate 2, but six months older. We can see a greater degree of control in Plates 3 and 4 than in Plate 2.

What we have in Plates 5 and 6 are drawings of Mom and Dad by a four-and-a-half-year-old girl. Here the plot thickens! The graphic discoveries of the two- and three-year-old are now used by the child to represent two people important to her. The images are simple in form. They are differentiated sufficiently to indicate who

is mom and who is dad. The sun is up, and the ground is down. Mom has long hair; dad does not. The visual differentiation in the images is sufficient for them to function as a kind of visual narrative.

What is truly impressive is the child's ability to get to the visual essence of a visual field. The child has created the structural equivalent by using a colored marker on paper to reveal what is in her visual field, and she has done it with utmost economy. I believe economy of image is emphasized because the drawing need not be elaborated to serve its primary function: representation. In a sense, "less is more." As images take on more of a didactic function, as they become closer to narrative, the "story" may supersede interest in the aesthetic properties of the image. The point for the child is to tell the story through the image.

We turn now to Figure 1, a drawing of a cat made by a six-year-old. What is striking about this image is the utter simplicity with which the child has captured the essential "cat-ness" of a cat.

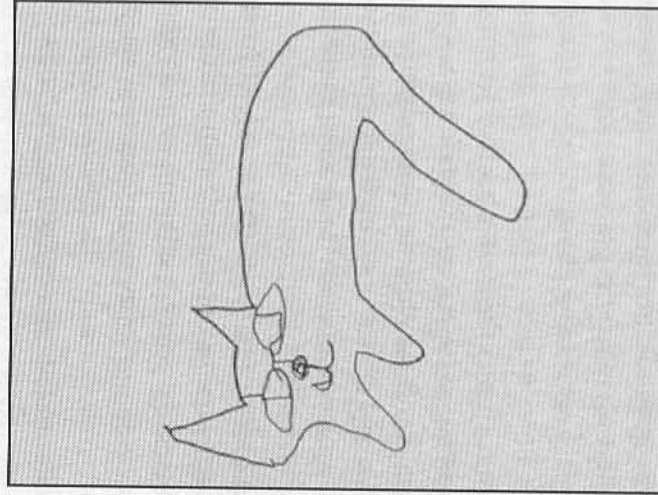


FIGURE 1

There is an extraordinary economy of line used to render the image. In some ways, the drawing is reminiscent of something that Henri Matisse might have created. What we have here is an image that distills the student's experience with cats, and that distillation emerges in a portrait of the cat's most telling features: the eyes, nose, mouth, and, of course, the two peaked ears along with a tail.

The child has made no effort to draw the hind legs of the animal; what is necessary for the child is the production of an image that captures the essential, not the photographic, features of the cat. What has been created is what is sometimes called a schematic image, a flat, simple depiction of structural relationships. Why such an image? The child is interested in representation. The representation is schematic in the way in which a sign on the men's and women's restrooms is schematic. There is enough detail in the image to do the job, that is, to represent cat. More is not needed.

Figure 2, drawn by a six-year-old, also distills the essential features of the scene and objects the child wants to draw, but this drawing contains several conventional signs. For example, the sun

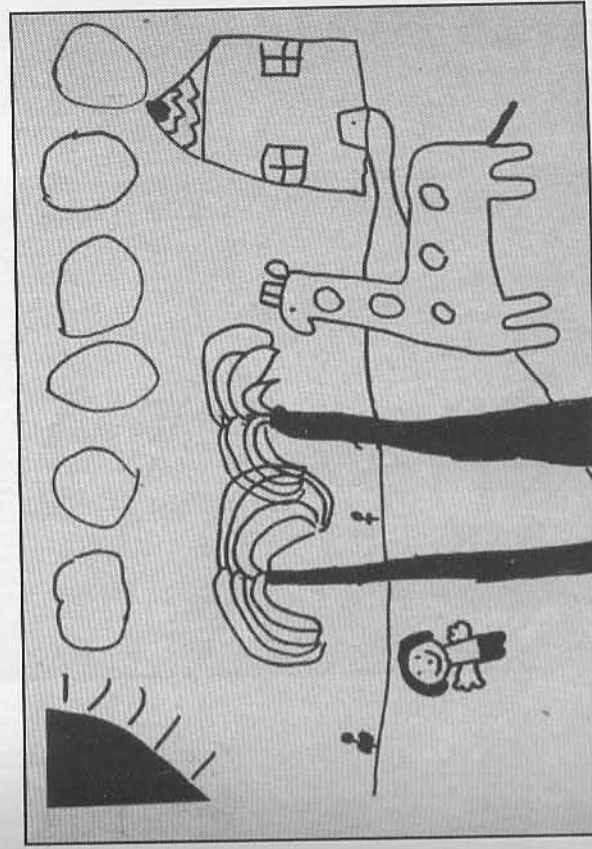


FIGURE 2

is handled as a formulaic indicator of meaning. It is a conventional use of a drawn sun that many children share. It is up, and it is tucked away in the corner of the paper. The house, too, reflects the use of learned conventions. Few if any houses in the area in which this student lives have windows of the kind he has drawn or a peaked roof. The door, replete with handle, is lower in height than the windows. Again, attention to particulars rather than relationships dominates, although in this drawing relationships are attended to. The trees overlap; the animal and the drawing of the child are situated on the ground. Clouds occupy their own space above; another use of convention.

Still another use of convention is the placement of flowers on a horizon line. What we have in this picture are essentially a baseline and a horizon line. The baseline accommodates the two trees, and the horizon line provides a grounding for the flowers. In each case the renderings of the objects are schematic and simplified. The picture is a narrative, a kind of didactic expression that conveys a

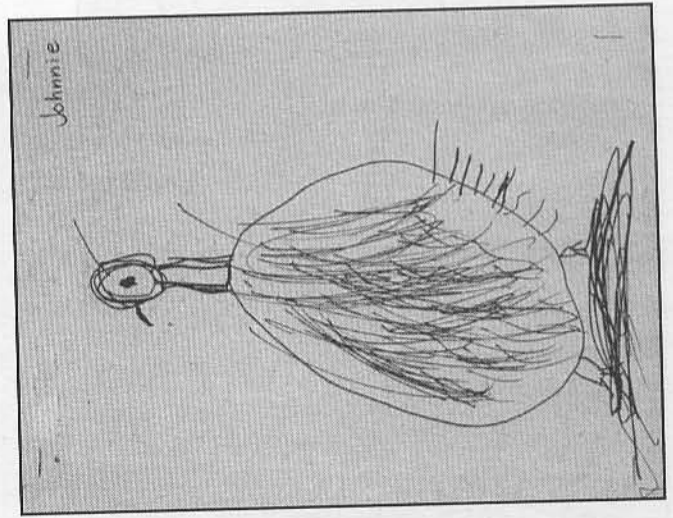


FIGURE 3

scene. This drawing is a narrative in which visuals rather than words have been used to tell a story.

Figure 3, made by a kindergartener, presents another simplified schema, this time of a bird. What is notable here, in addition to the child's effort to render the essential features of the bird, is the attempt to ground the bird with the horizontal strokes, thus providing a platform for its feet. The texture of the bird is conveyed by both the vertical lines on the bird's body and the horizontal lines protruding from the right side of its body. Additional lines are placed around the bird's neck and head as if to indicate the presence of feathers. The child clearly knows the visual features the bird possesses.

Simplification is visible as well in Figure 4, made by a third-grade student. Here we have an elephant drawn from the side view. The side view of an elephant, like the side view of a chair or table, is its least ambiguous angle. To render an elephant convincingly from a realistic perspective looking straight on from the front would be a formidable technical achievement. The image that is

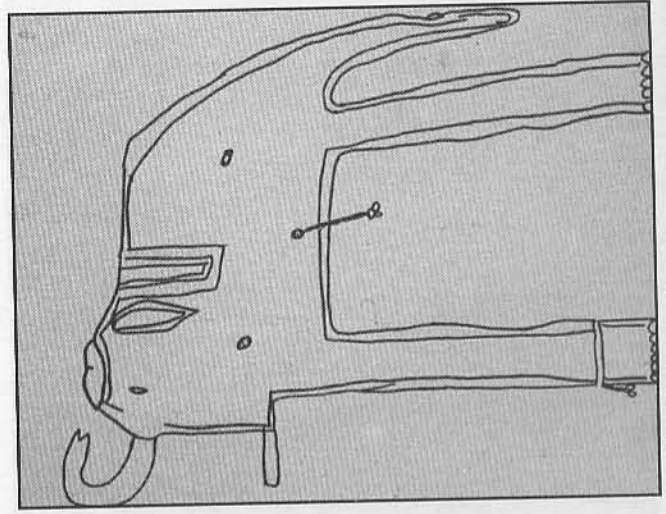


FIGURE 4

most telling and easiest to portray is one from the side, an image that shows the animal's most revealing feature, the trunk. Children grasp the perspective of an object or animal or person that is most revealing of its essential structural properties and then create its structural equivalent within the limits of the material with which they work and their technical repertoire.

Figures 5 and 6 are drawings made by two third-graders of the activity of jumping rope. Particularly interesting in this pair are the two ways in which movement has been achieved. In Figure 5 there is a visual illusion, almost like that in Duchamp's *Nude Descending a Staircase*, that projects the movement of the rope as it encircles the jumper. But in this drawing the figure's feet and legs are stationary. In Figure 6 the ropes the jumpers use are all overhead, but the feet and legs of the jumpers are moving and, in two cases at least, off the ground. What we see here is greater attention to detail and to realistic proportion.

Note that in both rope-jumping drawings the figures are flat.

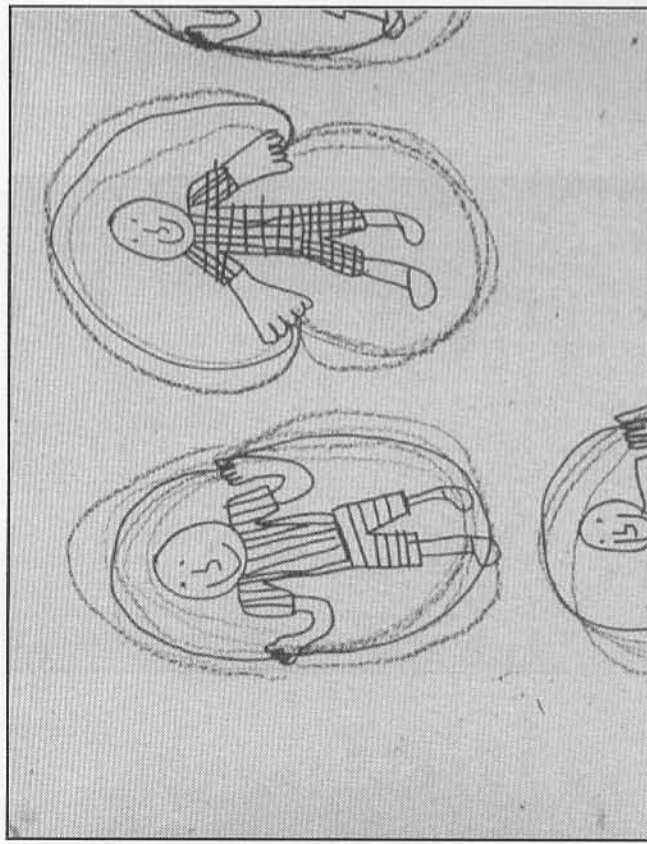


FIGURE 5

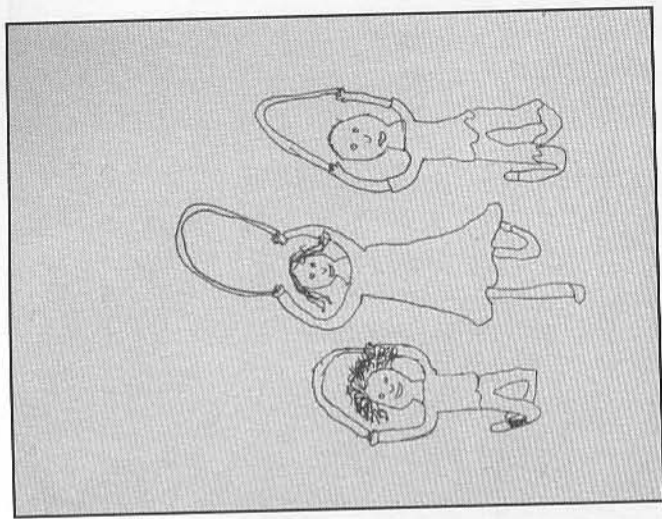


FIGURE 6

There is no attention to matters of volume as there will be later on. The creation of roundness and the illusion of light and shadow have not yet become a part of either the intention or the graphic repertoire.

Figures 7 through 11 reflect the expansion of both perception and graphic technique. Figure 7 shows the ability to attend to detail, to describe proportion, and yet to employ convention (note the way the nose is handled) to draw a portrait. The use of convention shortcuts the careful perception of the forms to be drawn. With convention, the empirical world need not be consulted; one simply moves to the convention one knows how to draw. The creator of this drawing draws not what she sees, but what she knows how to depict, namely the conventions that stand for house, tree, and, in this case, nose. Since the aim of the drawing is not to render realistically, the use of such conventions for many children is not a problem until the desire to draw realistically emerges.

The ability to create a realistically convincing drawing is a man-



FIGURE 7

ification in our culture of mastery. The ability to render realistically is an object of admiration that many students wish to accomplish. It is not necessarily a universal ambition. Cultural values and the forms of art children are exposed to influence the images they consider desirable. Culture, therefore, influences what counts as an artistic performance.

Figures 7 through 11 display growing sophistication in the technical repertoire. Figure 8 was made by a sixth-grade student and shows some of the features of Figure 7. Look at the way the nose is handled in Figure 8. The nostrils are still present, but in a more realistic form, and the bridge of the nose moves into the eyes in a way that the child who drew the woman's portrait in Figure 7 was not yet able to accomplish. In addition, the child who drew Figure 8 was able to address the turn of the collar as it circles the neck. Strands of hair now look more realistic.

Yet Figure 8 is still a flat, frontal portrait whose visual qualities are similar to those of the drawings by the younger children. Fig-

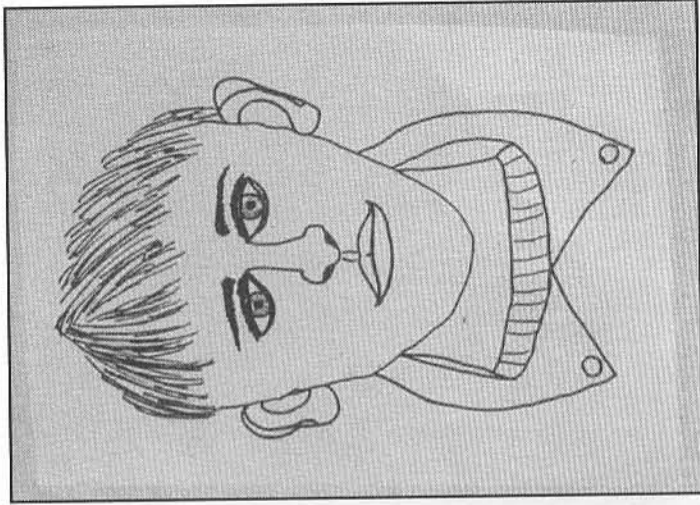


FIGURE 8

ure 9, in contrast, incorporates the creation of volume and the use of light and dark. This technical achievement is associated with a high level of graphic competency, a competency fueled by careful attention to the person portrayed.

Figure 9, a portrait made by a twelfth-grader, displays not only sophisticated graphic technical ability but also playfulness in the treatment of light and dark and in the stylized patterns through which light and dark emerge. There is an intentional abstractness employed for aesthetic purposes; this student is thinking about the image as an artistic achievement, not only as a representation intended to serve didactic purposes. This image is considerably more than a two-dimensional schema.

So, too, are Figures 10 and 11. In both cases the qualities of the medium, ink drawing, are exploited to generate qualities that are intended to yield aesthetic satisfactions. Note the free treatment of line in Figure 10 and how the transparency of the pants over the two legs

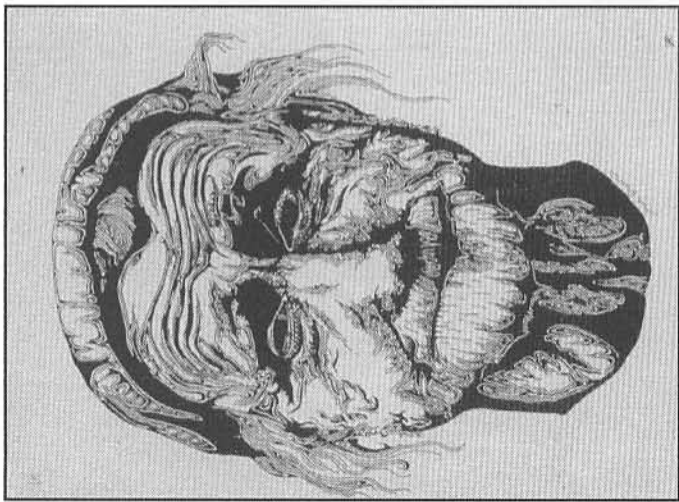


FIGURE 9

of the man is left as is. This student appears to recognize that in art there is license, and that with license there is liberty, and that the liberties that one can take in drawing can serve aesthetic values.

Figure 11, made by a sixteen-year-old, teaches the viewer that there are many ways and many vantage points by which to view a tree. Here we have an intentional selection of that part of a tree that displays a composition of form captured through texture and light. The contrast between the rough solid bark and the lacelike branches and small budding leaves provides a visual interplay of what is strong and what is delicate and in so doing affords the viewer a visual delight.

Figures 12 and 13 provide additional examples of how eight-year-olds and twelve-year-olds handle visual representation. The drawings in Figure 12 are similar in character to those in Figures 1, 2, and 3. Each is a schematic representation displaying the most revealing features of the objects drawn; the simplest form is used

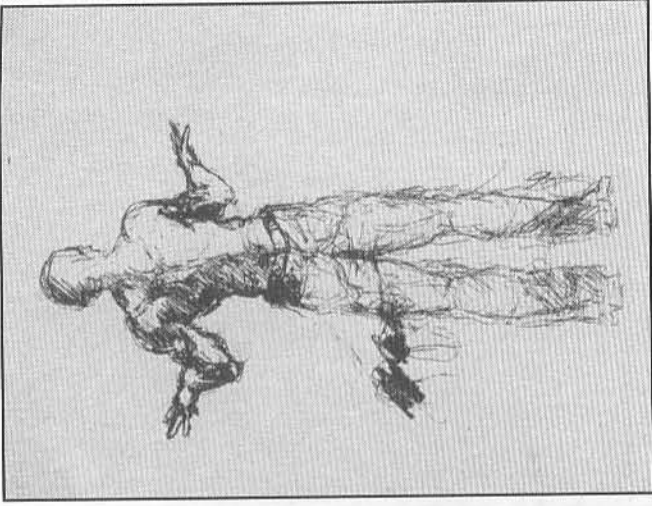


FIGURE 10



FIGURE 11

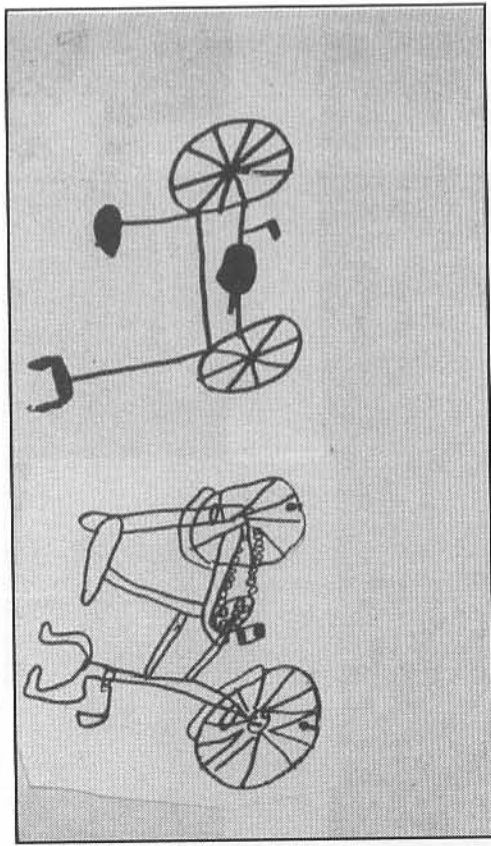


FIGURE 12

to display the most telling characteristics of the subject. Each of these drawings depends upon the child's ability to grasp the overall configuration of trees, birds, cats, and bicycles. But then the child must represent those telling characteristics on a flat surface. Again, the aim of the drawing is didactic. It is to represent in a straightforward way the "bicycleness" of a bicycle.

In Figure 13 it is clear that the attention to detail and the technical skills of the twelve-year-old artist have enabled him not only to reveal the telling features of a bicycle, but to treat convincingly the front wheel in its least most revealing perspective. In a sense, the drawing says: "Look what I can do with illusion! No low board diving for me!"

Figures 14, 15, and 16 are all concerned with the creation of illusion. Figure 14 creates a sense of illusion through the overlap of forms and through the effort to create shadow by darkening sections of the figures. It also represents an interest in groups. We cannot tell whether the group represents family or friends, but clearly the image displays an interest in the social aspect of life and seems to capture the trendiness of outfit and the sunglasses the images display. Line, shadow, and overlap are used to project the visual meaning of the image.

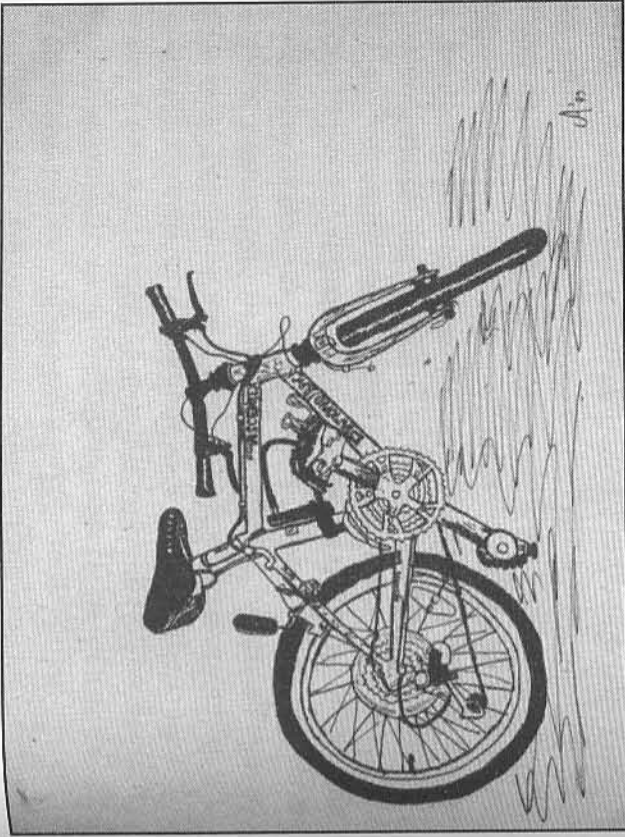


FIGURE 13

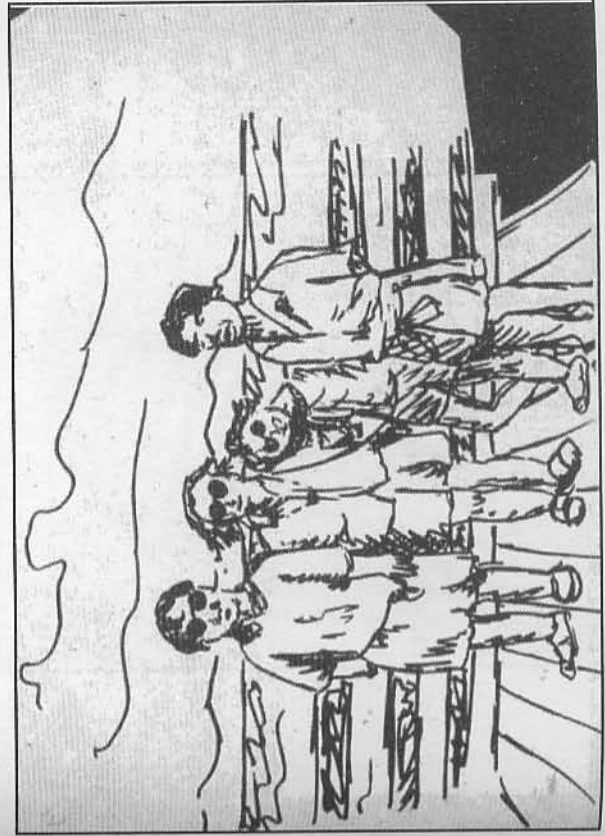


FIGURE 14

Figure 15 is also concerned with illusion, but here technical controls are not as well developed. The image is flat, yet at the same time conveys a charming awkwardness in the child's effort to seat a figure on a chair. It is not unusual to find an active, expressionistic character in children's drawings. This is an instance of such work. In some sense, the child has reduced the image to its essential features and in the process created a drawing that has movement and a sense of liveliness. However, it seems to me highly unlikely that these features were the result of conscious intent. An adult artist who attempts to create such a feeling is likely to know what he or she is trying to accomplish and how to achieve it. Many children create extremely expressive work intuitively rather than through a conscious sense of control and the sort of appraisal that adult artists exercise. To some degree these works are the result of happy accidents that can be used by teachers to advance students' understanding of what might be called the architecture of form.

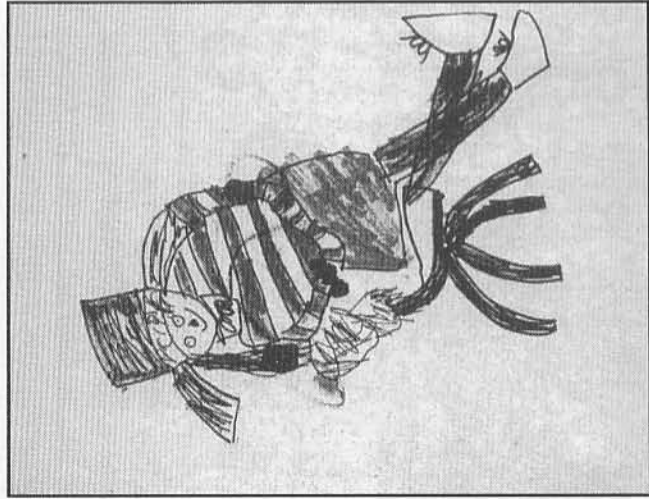


FIGURE 15

Figure 16 displays a sophisticated rendering in the simplest terms of a portrait of a girl. The image is almost Lautrec-like in its flat, almost posterlike features. Here, too, illusion is sought, but within the stylistic constraints the student is using.

In the series of drawings shown in Figures 17, 18, and 19, all made by high school students, we encounter the results of a different kind of task. Here, the problem set by the teacher is to start with a familiar subject and to make successive modifications on that subject so that it comes to represent an entirely different subject through gradual transformations. Thus, in Figure 17 we start with a clothespin, which then is transformed to suggest a couple embracing, followed by another drawing of a couple embracing, but this one perhaps slightly more ambiguous. This is followed by the emergence of a frog, whose features one can readily identify in the preceding drawing. This fourth drawing is followed by a detailed representation of a frog, a representation that displays considerable technical acumen.



FIGURE 16

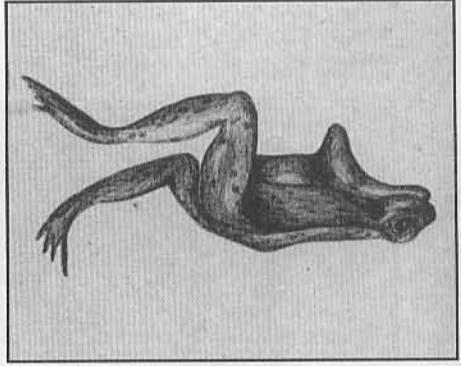
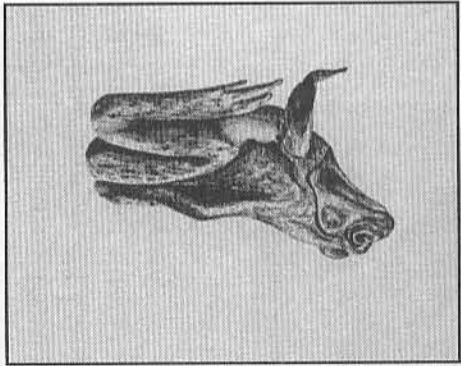
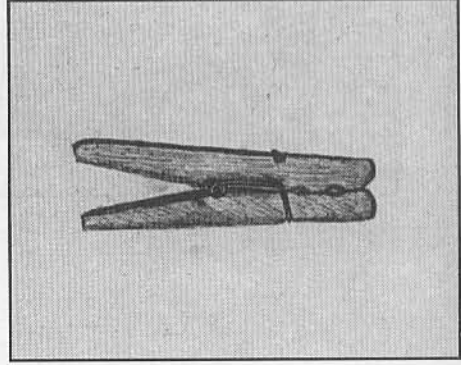
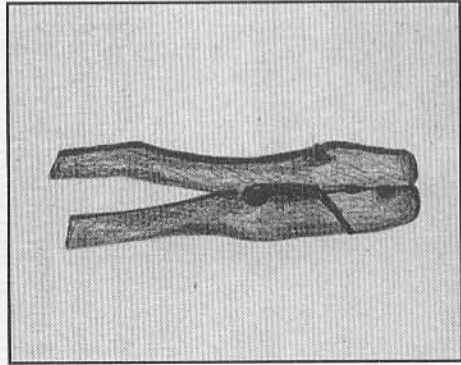
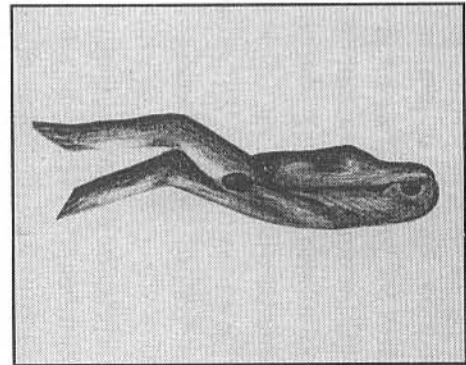


FIGURE 17

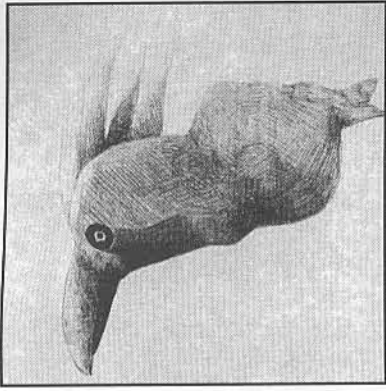
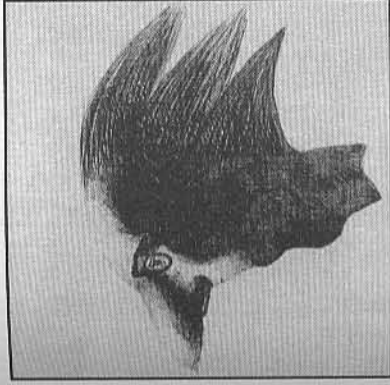
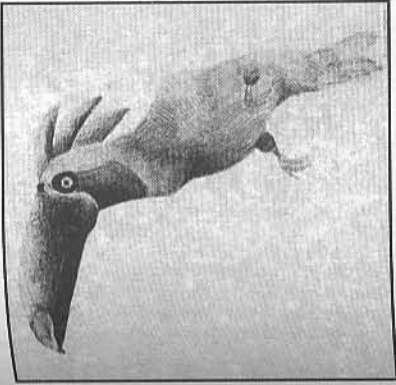


FIGURE 18

One of the contributions that all teachers, but perhaps especially art teachers, can make to the cognitive development of their students is to frame tasks that challenge them to think in new ways. The drawings in Figures 17, 18, and 19 are solutions to a problem that was framed by the teacher and that adolescents often find intriguing. It requires the ability to break a perceptual set so that the forms that constitute a familiar object can be gradually transformed; the object itself becomes something other than what it was at the beginning. Imagination must be exercised in order to conceive the potential of the forms for transformation. In the series in Figures 17, 18, and 19, students display convincingly that they are able to make those transformations, and with a high degree of technical competence. The drawings are not only clever; they have an aesthetic appeal stemming directly from their creators' skills.

Figure 20 displays a playful attitude toward the use of line. The student is able to treat line abstractly and to use it playfully to cre-

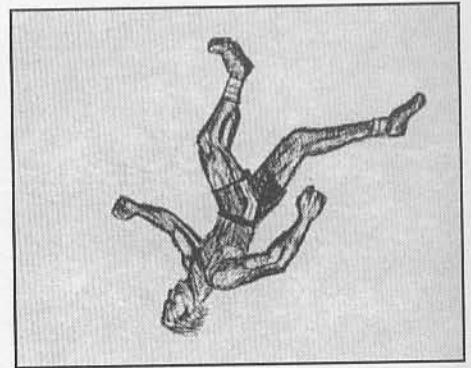
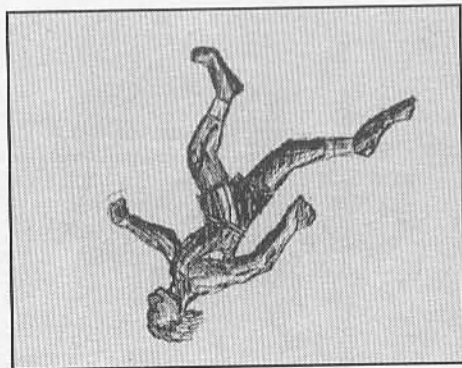
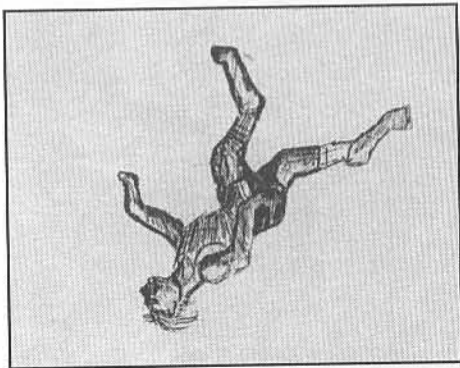
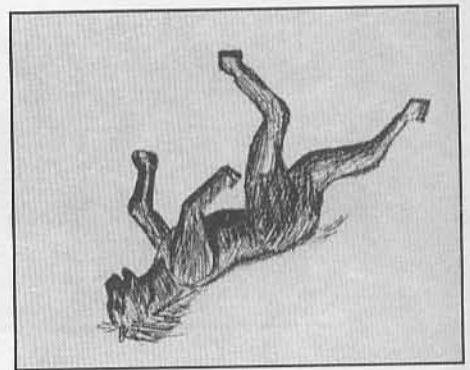
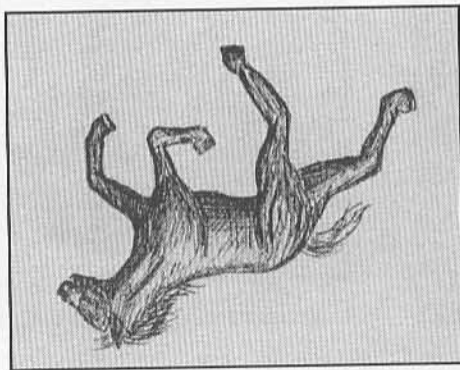
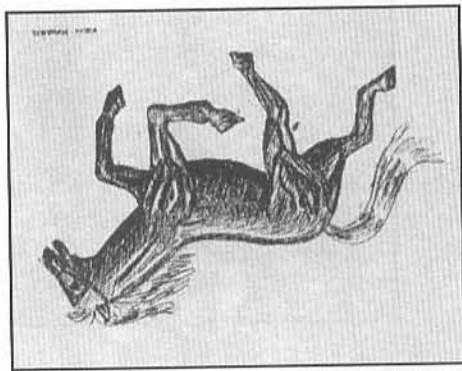


FIGURE 19

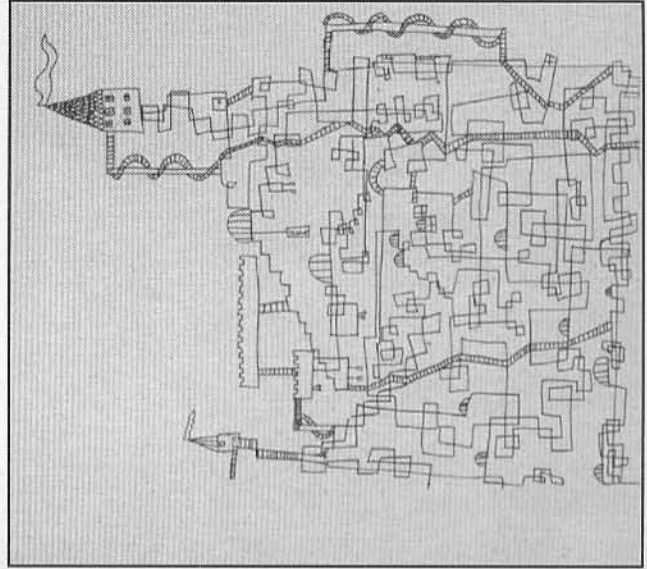


FIGURE 20

ate a flat design that itself makes it possible to take a visual trip through the maze-like features of what appears to be a maplike display of a city, a building, or a castle.

Plate 7, made by a nine-year-old, displays a rather remarkable overlap between the two female images. Almost Picasso-like in character, the overlap of the images gives a second eye to the figure beneath it, even though only one eye can be seen from this angle. Whether this result is conscious or accidental cannot be determined at this time. Nevertheless, the image is a powerful rendition of composition and color. Note the oblique axis on which the two images appear, conferring upon the drawing a sense of motion that would otherwise be absent.

Plate 8, made by a seven-year-old, is a simplified, almost de Kooningesque characterization of a female. The image is simplified and visually strong, filling the entire picture plane; and it treats color not simply as something to fill a space, but as something to modulate in order to create variation and nuances of color. There is a tactile quality to the surface as a function of the way color sits upon it. The result is a powerful, frontal, strong, richly colored image.

Figures 21, 22, and 23 display drawings of crowds. One way to create a sense of depth on a flat surface is to use overlapping objects. Another is to reduce the size of objects of similar size; a third is to decrease the color intensity of objects in the background. Students often have difficulty handling distance, particularly with respect to the overlapping of form. What we see in these images is the result of another teacher-initiated activity, the drawing of a crowd. By suggesting this subject and by discussing with students how crowds might be portrayed, the teacher opened the door for students to secure another array of technical skills, ones that open up new possibilities and confer a freedom derived from growing technical competence.

These drawings look almost like tapestries. They are similar in their overall configuration, but display individuality in their details; each reflects the artistic signature of its creator. The acquisition of a newfound method for displaying depth through overlap can now function as a part of the technical repertoire that these children can employ in addressing other visual problems. The

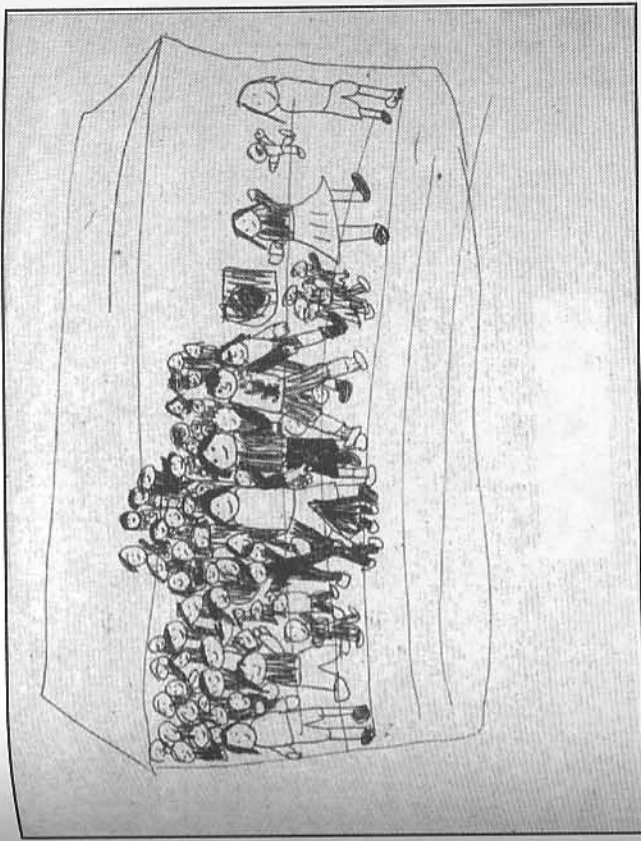


FIGURE 21

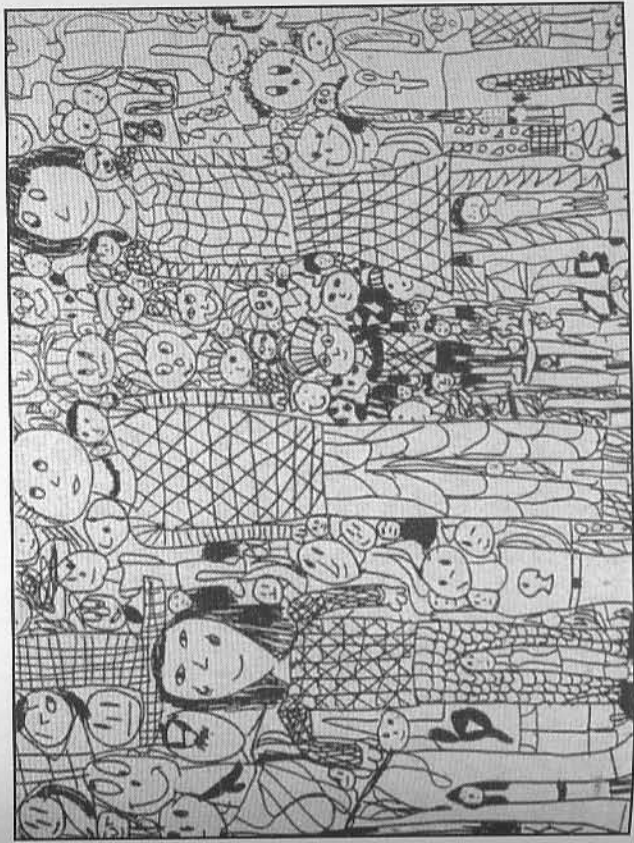


FIGURE 22

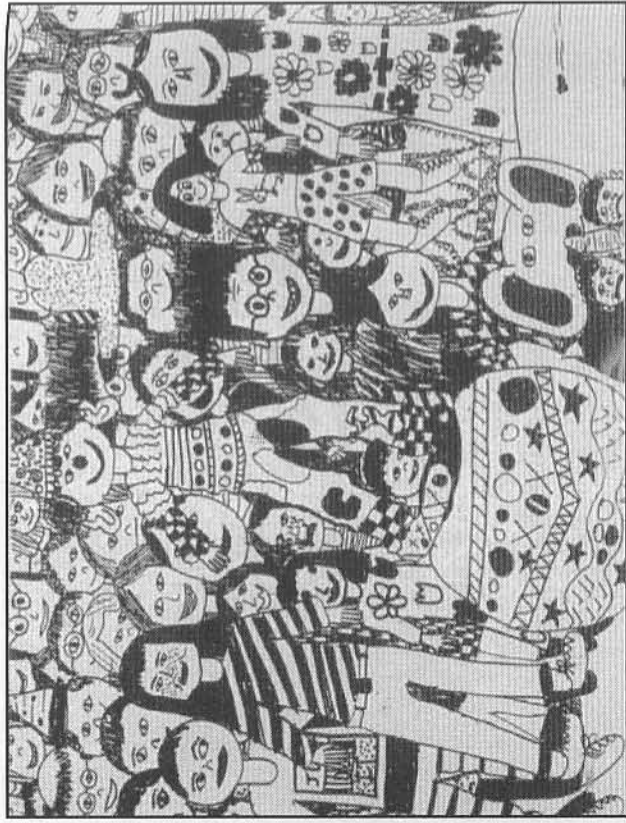


FIGURE 23

teacher's role was critical in promoting and supporting the development of these skills, which in turn reflect distinctive ways of thinking about the creation of visual art.

Because I have focused my comments, in large measure, on the acquisition of technical skills, there may be a tendency to regard the images described above as the result of a manual, technical undertaking. Techniques represent ways of doing something, but techniques also reflect ways of thinking about the thing to be done. Thus the acquisition of a technique is not merely a technical achievement; it is a mode of thought; and as such the changing features in children's artwork are the result of changes in the way in which they think about what they are doing. The shift from a didactic to an aesthetic or expressive mode is a reflection of the mental models children employ in defining the purposes of their work. The adjustments and "corrections" that they make on their work are a reflection of what they have learned to see and the distance that exists between what they have made and what they want to make. That kind of analysis is important not only in the

arts but in virtually every walk of life. The ability to appraise, to project revisions, to act on those projections, and to evaluate their consequences is fundamental to good work in any field. Such accomplishments require the ability to think. What we see in children's artwork, particularly when it is laid out over time, is the progression of the development of such thinking.