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The influence of cognitive psychology on art education as seen in the work of Howard Gardner and Elliot Eisner

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The influence of cognitive psychology on art education as seen in the work of
Howard Gardner and Elliot Eisner

by

Marcia C. Rich

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in partial fulfillment of the requirements for the degree of
DOCTOR OF PHILOSOPHY

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CHAPTER ONE

GENERAL INTRODUCTION

Art education has been debated since the writing of Plato's *Republic*. It is alternately noticed and neglected by generations of educators. Its position in the curriculum ranges from non-existent to tenuous and it is accorded only a minuscule share of curriculum time and education resources (NSSE, 1992, p. 2). Sweeping changes are currently proposed for the way in which art is taught in the public schools of America. Since the 1970s, art education journals have been saturated with the debate about how art education could be made as important as the other subjects in the curriculum.

Two individuals, Howard Gardner and Elliot Eisner, are principal in this push to make art education more central to the curriculum. Gardner, arguably the best-known cognitive psychologist in America today, is a professor of education at Harvard University and co-directs Project Zero, a research project devoted to conceptualizing and assessing varieties of human intelligence and exploring artistic uses of intelligence. Gardner's research project, Project Zero, has implemented a cognitive approach to artistic education in the classroom which is called Arts PROPEL (PROPEL is the acronym which uses the three aspects whose integration is central to artistic learning: Production, Perception, and Reflection. The final "L" reflects concern with "learning").

We claim a bit of credit for some of the recent reorientation in arts education. We believe that students need to be introduced to the ways of thinking exhibited by individuals involved in the arts: by
practicing artists and by those who analyze, criticize, and investigate the cultural contexts of art objects. (Gardner, 1993, p. 141)

Eisner is a professor of education and art at Stanford University specializing in art education, curriculum and educational evaluation. Eisner is a leading figure in art education in America today. He has been a dominant force in the development of the DBAE (discipline-based art education) theory and curriculum. DBAE is a theory of art education that appears to be taken from a cognitive psychology model. Today in most art education classrooms, art production plays a major role (Efland, 1990, p. 263; Gardner, 1993a, pp. 140-141, Eisner, 1986, p. 58). In the proposed DBAE curriculum, art criticism, art history, and aesthetics become the basis of the art program and art production would have only a limited role. Thus art education under DBAE becomes a non-performance course rather than a performance-based learning experience.

This dissertation will examine the work of two leading figures, Howard Gardner and Elliot Eisner to explore the relationship today between cognitive psychology and art education. This dissertation will not be an examination of cognitive science; rather, it will be an examination of how Gardner and Eisner are applying the theory of cognitive science to art education. Gardner and Eisner will serve as representatives of their respective fields, cognitive science and art education, because both are dominant individuals in their fields and both are widely known and broadly published. The writings of Gardner and Eisner appear to be very similar, but, in fact, their ideas about art education are quite different. Eisner
uses the language of cognitive science to describe his art education theories when, in fact, many of his theories come from behaviorism.

Gardner designs a new method of assessment to evaluate the learning in his art education theory. He believes all education should use the model he presents in Arts PROPEL as a fairer way in which children can learn and can be assessed. On the other hand, Eisner modifies his evaluation ideas for education so they fit into an art education program, thus making art education more like other courses in the curriculum. If art education is to become a non-performance academic course, it is important to know on what basis such a change is to be made.

History

It will be helpful to examine briefly the history of art education in America's public schools to understand more fully the historical relationship between educational psychology and art education. This relationship can be illustrated by the conflict between those who favor more scientific methods applied to curriculum and pedagogy and those who believe children learn better in a more child-centered environment. First we will examine the more child-centered movements in art education prior to World War II, followed by an examination of the scientific movements in art education prior to World War II. Finally, we will examine art education after World War II including the contemporary scene.

The common schools for mass education began in the nineteenth century. They were mandated in most northern states by 1860 and in southern states after
the civil war. Horace Mann, a leader of the common school movement, argued that they would serve as a way to teach a common culture, especially moral values, to the masses. He believed America needed trained designers for industry and was serving as secretary to the board of education in Massachusetts when they employed Walter Smith, an Englishman, to become the first art education supervisor for the state of Massachusetts. Smith drafted the first art education program for the common schools in America.

Smith decided to teach mechanical drawing even though few agreed as to what exactly was industrial and mechanical drawing. Smith based his pedagogy on the methods conceived by the Swiss native, Johann Henrich Pestalozzi. These methods were geometric and sequential in character. His plan encompassed all grade levels from primary grades to high school. Smith believed classroom teachers could use his method of instruction without the aid of special art teachers (Efland, 1990, pp. 101-103). Although art was to be taught by regular classroom teachers, Smith envisioned art specialists to implement his system and founded the first normal art school in Boston in 1873, to train these art specialists.

From the very beginning of the public schools, art education was in a tenuous position. Even though there was not complete agreement on the importance of including art education in the curriculum of the first public schools, the fact that in the minds of many, art education was serving a utilitarian purpose aided in its acceptance.
By the turn of the century, new discoveries in science began to have a direct influence on education. Some of this influence was positive for art education, some of it was not. Increased interest in psychology as a science led to the child-study movement and eventually to studies of children's art. These were very positive for the position of art education in the curriculum. Children previously were seen as creatures born in sin or as untamed animals in need of civilization by training, but by the turn of the century, children began to be perceived as creatures with innate divinity, innocent at birth, but subject to corruption.

The studies of children's art began with G. Stanley Hall. Moved by Darwin's theory of evolution, Hall believed that in the process of growth, a child passes through all of the stages in understanding from savagery to civilization. Hall felt the school should be adapted to the child and the curriculum should be geared to the nature, growth, and development of the child (Cremin, pp. 101-103). Hall compared children's art with primitive art and his work led to the study of children's art. Hall's scientific study of the child began around 1880 and by 1900, it began to have an impact on art education.

Another positive influence on art education was the child-centered school movement begun by John Dewey. His revolutionary ideas about education and his "ideas about the arts and their place in the curriculum were forerunners of what was to become common practice during the Progressive Era" (Efland, 1990, p. 167). He believed that subjects should not be segregated, but should instead be parts of the whole experience of education. Although Dewey's experimental school was not a
public school, his ideas affected public education. In Dewey's school the arts were central to the curriculum and were seen as a way to secure meanings of the world. Importantly, art production was used as a learning tool for all subjects. For instance, children were taken on field trips and encouraged to create drawings of their observations, thereby relating art to each experience. Drawing was also important to teach manual dexterity and individual expression (Efland, 1990, p. 168).

The drawing and painting activities of the school were based on the assumption that a creative attitude of mind is essential to complete art experience. . . . Pictures which children draw . . . must be derived from their own significant experiences. . . . As it is only through the idealization of their own life and interests that children become creative in their art. (Mayhew and Edwards, p. 359)

Dewey believed in the value of experience. The individual does not experience the world with an empty mind, but perceives it through a screen of previous knowledge. As new experience is gained, intelligence constantly revises one's concept of reality. First-hand experience and contact with other minds and social agencies is vital to learning. According to Dewey, art is a quality that permeates an experience (Dewey, 1934, p. 58). Art education at Dewey's school involved the children handling raw material of many kinds and shaping them to their own planned ends. "Under guidance these results grew into more and more finished products of greater meaning and artistic value" (Mayhew and Edwards, p. 341).

Art is not an outer product nor an outer behavior. It is an attitude of spirit, a state of mind — one which demands for its satisfaction and
fulfilling a shaping of matter to new and more significant form. To feel the meaning of what one is doing and to rejoice in that meaning, to unite in one concurrent fact the unfolding of the inner life and the ordered development of material conditions — that is art. (Dewey, quoted in Mayhew and Edwards, p. 348)

Dewey believed that during the process of creating art, a joining of thinking and feeling occurs.

[Art] is something more than the mere technical skill required by the organs of expression; it involves an idea, a thought, a spiritual rendering of things, and yet it is other than any number of ideas by themselves, it is a living union of thought and the instrument of expression. (Dewey, quoted in Mayhew and Edwards, p. 348).

Dewey’s methods of teaching art are important because the art education movement of self-expression came from Dewey’s methods. It is important to note, however, that Dewey’s methods were not typical of the curriculum in the common schools during the early part of the twentieth century.

Another experimenter with the child-centered schools movement that had an affect on art education was Margaret Naumburg. Naumburg’s school was geared to the education of the individual child. The arts were stressed in Naumburg’s school and, as in Dewey’s school, became a medium for self-expression. To Naumburg, artistic creation can bring to conscious life “buried” material of emotional problems. The children are urged to “paint exactly what they feel impelled to paint” (Cremin, p. 213).

The child-centered school movement had its greatest affect on art education during the early decades of the twentieth century. Educators became concerned with the child’s individual growth. At the child-centered school, art education came
from artist-teachers rather than from professors of art education. These artist-teachers believed there was an "affinity between the activity of the artist and the graphic expression of the child" (Efland, 1990, p. 196). Expressionism or creative self-expression is present in all forms of the arts during this time and became a method of art education which was to remain a strong influence for 40 years. It developed from Hall's child-study movement and from progressive educational ideas of child-centered schools. Freudian theory also influenced this movement by declaring the unconscious mind to be the source of human motivation. Because of these influences, educators came to believe that the real task of education was not to repress, but to allow the child's emotions to flow toward useful channels (Cremin, p. 210, 211). Art pedagogy under expressionism was based "on the premise that children are artists and that their art, like all art, is inherently valuable" (Efland, 1990, p. 195). The art of children, under expressionism theory, however, is susceptible to corruption by adult influences.

From the self-expressive movement came the judgment that children's art was a style of art in its early phases of development. The child was viewed as an artist and children's art was compared to that of the artist.

Three factors contributed to this recognition, studies in psychology, the growth of interest in primitive art, and the appreciation of the characteristics of modern art. These developments provided advocates of child art education with solid basis for reasoned argument and comparison. (Macdonald, p. 320)

In defining children's art as an art style, studies in psychology were important because the unconscious mind was thought to be the source of human motivation
and the self-expressive movement held that the mind of a child was closer to an unconscious mind than the mind of an adult. Also, "so called" primitive art was creating new interest and was important because simple and naive artistic symbols were more valued. Appreciation of modern art as well brought new ways of looking at abstracted and simplified forms.

Among those interested in the art of children was Victor D'Amico. He was a major voice in art education throughout the 1930s and 1940s (Efland, 1990, p. 202). His book, Creative Teaching in Art, had seven printings and was widely read. D'Amico feels there is too great a tendency to compare the child and the artist, thereby suggesting they are alike.

The child, like the artist, integrates the elements and responds to them emotionally. But these reactions on the part of the child are usually unconscious. . . . There is, of course, no similarity between the child's powers and the skills and techniques of the professional artist. The work of a trained artist is the result of deep experience, maturity, and a facility that comes from years of rigorous technical discipline. (D'Amico, p. 1).

In his book, D'Amico places emphasis on the practical problems of teaching art, rather than on motivation and encouragement, which accounted for some of his popularity. He urged teachers to help the child become aware of art values and to use their own experiences as sources of inspiration.

Several other developments took place in art education during the depression years. Many isolated rural schools were forced to close due to lack of funds. Some areas were forced to curtail or eliminate their programming in the arts. However, at a time when there was little funding for art education, high school art
programs actually expanded during this period. More students attended high school and more students graduated. There was growth in art education theory during this period also and there was experimentation in curriculum integration, such as the experimental art education project in Owatonna, Minnesota, between 1933 and 1938.

The Owatonna teachers were shown how creative activities such as illustration, modeling, and construction would be related to other school subjects. Students had opportunities to learn about the expressive use of color, form, and the elements of design using a broad range of media. Class activities were related to art problems in the environment. Students designed houses and planned interiors as well as landscaping. They also decorated windows and designed labels for commercial products (Efland, 1990, p. 208-210).

Having looked at the more child-centered methods of art education, we will now turn our attention to the second theme in education during this period, that is, the more science-oriented methods. Some of the scientific advancements around the turn of the century had a positive affect upon art education. For instance, many of Freud's discoveries had a positive affect. Other scientific advancements had a much less desirable affect. For example, the advancements of Edward L. Thorndike had a much more negative affect on art education. Thorndike was the first to clearly define education psychology (Glover and Ronning, p. 5). Thorndike studied human behavior through animal experimentation. His studies were original and moved psychology to a science by "making it the study of observable,
measurable human behavior” (Cremin, p. 112). Thorndike believed all children have an “original tendency” that can be exploited depending upon what learning takes place. He had great faith in quantitative measurement and he also discovered inherited individual differences. Thorndike, a prolific writer as well as a scientist, was widely published. He offers advice for teachers in his dissertation, *Animal Intelligence*.

> The best way with children may often be, in the pompous words of an animal trainer, to arrange everything in connection with the trick so that the animal will be compelled by the laws of his own nature to perform it. (*Animal Intelligence*, quoted in Cremin, p. 112)

"Certainly no aspect of public-school teaching during the first quarter of the twentieth century remained unaffected by his influence" (Cremin, p. 114).

Thorndike urged that pedagogy could develop into a science through the use of knowledge produced by tests and measures. These methods were supposed to improve education, but they actually resulted in the standardization of educational practices which through standardization and consequent routinization, limited innovation in public education.

Another influence upon education in America during this period was Englishman, Herbert Spencer, and his ideas about social Darwinism (Cremin, p. 93). He believed that an individual who held power gained it by being the fittest in competition and was, therefore, the most suitable for leadership. Education, if thought of this way, becomes preparation for life. Instruction should begin with
objects rather than abstractions and morals are best taught by connecting acts with consequences (Cremin, p. 93).

Spencer was not opposed to the teaching of art in the schools, but he did feel the doctrine of evolution provided a rational basis for determining the relative importance of subjects in the curriculum. If the aim of education is preparation for life, then last on the list of necessities for education is the gratification of tastes and feelings. "By Spencer's reckoning the arts assume a minor role" (Efland, 1990, p. 157). Surprisingly, in spite of Spencer's scientific orientation, he did not like the scientific or geometric method of teaching children to draw. Anything that repressed the nature of the child was hindering evolution. He believed the natural inclination of children is to make outline drawings from nature and to use color. "The question is not whether the child is producing good drawings. The question is, whether it is developing its faculties" (Spencer, quoted in Macdonald, p. 322). For Spencer, the arts "occupy the leisure part of life, so should they occupy the leisure part of education" (Essays on Education and Kindred Subjects, quoted in NSSE, 1992, p. 2).

Social Darwinism became the rationale for the social-efficiency movement. The social-efficiency movement brought attempts to make the curriculum more functional by eliminating nonproductive procedures and subjects. That included students who were judged to be "too dull" to profit from schooling would be trained in ways commensurate with his or her innate ability (Efland, 1990, p. 164). According to this theory, those in power positions in society were superior. Being in
a position of power meant an individual had risen to power because he was the most fit and most suitable for leadership. The successful businessman was chosen as a model of the most fit leaders in America. The businessman’s standard for efficiency became the standard for judging efficiency in education. Attempts to measure the efficiency of teachers and then the intelligence of children became more common. The social-efficiency movement combined with Thorndike’s ideas on tests and measures to setback the position of art education in the curriculum because achievement in the arts was difficult to measure with efficiency standards. Intelligence tests did not seem to judge intelligence in the arts and art aptitude did not appear to relate to general intelligence.

A profound set-back came again to art education from the Report of the Committee of Ten. The Committee of Ten was formed in 1892 with prominent educators appointed by the National Education Association to study high school curriculum. In effect, they were to decide which knowledge was worth having. Unfortunately, only brief attention was given the arts, thus placing the arts in a position of less importance than other subjects in the curriculum.

It was . . . thought best to leave it to local school authorities to determine without suggestions from the committee how [music, drawing, and elocution] should be introduced into the programs. (Committee of Ten, 1895, quoted in Efland, 1990, p. 163)

Their decisions affected policies for secondary education for the next 25 years and condemned the arts to the status of elective studies, a status art educators have been struggling against ever since.
Several changes occurred in the public schools during the 1920s and 1930s, all of which affected art education. Junior high schools began to replace the eight-grade grammar schools and were organized by subject-matter departments. This would have presented an excellent opportunity for placing art education as a subject in the junior high schools. Lack of funding, lack of interest, and lack of organized efforts to do so resulted in a lost opportunity. Another change during the 1920s and 1930s was that professionally oriented university art departments developed in the land-grant universities of the Midwest, offering degrees in art and also art courses for teachers. Finally, the scientific movement in general education encouraged curriculum development and the testing of academic ability and achievement. The attempt to measure and predict student performance on the basis of scientific tests tended to weaken the position of the arts in education.

Behaviorism was the next educational psychology movement to “sweep” the pedagogical world. Behaviorism is a philosophy of science that holds that psychology is the study of individual behavior in interaction with the environment (Glover and Ronning, p. 153). Movements such as functionalism, pragmatism, structuralism, and transcendentalism laid the basis for experimental psychology concerned with behavior (McLeish, p. 71). Apperception, which is a part of the behaviorism theory,

\[ \text{carries with it the implicit assumption that the neutral and passive minds of children are being filled. . . . There is no causal relation between body and mind; a person's mind does not affect his body, nor his body, his mind. (Bigge and Shermis, p. 35)} \]
All perception, is apperception. "It is a process of new ideas relating themselves to the store of old mental states" (Bigge and Shermis, p. 37). Right thinking will produce right action, thus, if the teacher builds up the right sequence of ideas the right conduct follows.

The work of B. F. Skinner, who thought himself a radical behaviorist, has profoundly influenced basic and applied research and practice in the field of educational psychology (Glover and Ronning, P. 138). "Skinner represented his psychology as a means of immediately placing education on an efficient basis" (Bigge and Shermis, p. 51). His research included,

- a procedure designed to study the behavior of animals in the laboratory, often labeled the “Skinner box” but more appropriately named a “conditioning chamber”; with a concept, operant conditioning . . . aimed at the explanation of behavior, be it in animals or humans. (Richelle, p. 3)

He was absolutely convinced response could be shaped by reinforcement. Skinner believed, "concepts of the mind (cognition) and self are useless and damaging inventions which are resorted to when we cannot otherwise account for our actions" (Sparzo pp. 225-226). Skinner once lectured before the Poetry Center in New York City pointing out that, "a poet has a poem in much the same way as a woman has a baby, explainable in terms of gene variation and selection of behavior by consequences in lifetime of the poet" (Skinner quoted in Sparzo, p. 226). In other words, the artist creates because of genetic endowment, personal history, and current setting or circumstances in the environment. Skinner did not agree with the idea that an artist is an "originating, initiating, creating agent" (Sparzo, p. 226).
According to Skinner, feelings of students do not explain behaviors. Feelings are not important in a scientific understanding because we do not behave because of our feelings; that is, behavior does not start with feelings. It is genetic and environment histories that are responsible for both behavior and changes in our bodies (Sparzo, p. 226). Behaviorists do not talk about psychological involvement of the learner or of helping students see the point of learning. Learning is defined by Skinner as a change in either the form or the probability of responses. Usually change occurs because of operant conditioning (Bigge and Shermis, p. 95). Some of the behaviorist ideas will be discussed further in Chapter Four.

While art was being taught in the classrooms in a creative self-expressive manner during the middle years of this century, clearly the forces driving the rest of education, especially educational psychology, were far from agreeing that art was a necessary part of the curriculum of the public schools. In 1941, the National Society for the Study of Education (NSSE) published Art in American Life and Education, as its fortieth yearbook. It was the first time art education had been given systematic attention by the national organization. The yearbook urges that art as a subject be regarded as an integrated part of the school curriculum because,

in pursuing the subject, the pupil grows in the appreciation of art, and he acquires control over materials and processes, attaining thereby greater facility of self-expression. . . . Although comparatively few pupils will become producers of art, all, through effective teaching processes, can be brought to the recognition and use of the principles of design in their daily lives. (NSSE, 1941, p. 469)
The authors seem to agree that art education provides an outlet for emotion and provides experiences for both the artistically apt and inapt. There are emotional benefits a child can receive from art production. Although the thoughts presented seem to have captured some of the art-in-life theories of the reconstructionists, clearly in 1941, the NSSE supported creative self-expression as an important consideration in the teaching of art. Their view also recalls Dewey’s ideas of how emotion can be transformed into expression, it was thought that by manipulating materials, a child also puts his emotions in order, even though the artistic result may not rank highly as a work of art, the expression is genuine (NSSE, 1941, p. 471).

Although the NSSE does not mention Naumburg, her experimental school had a similar theory of teaching the arts.

Post World War II

The post World War II period featured one very influential individual in art education who was interested in a more child-centered method of teaching art. Victor Lowenfeld saw free expression as necessary to the healthy growth and development of the child.

When [free expression] is thwarted either by a loss of self-confidence or by the imposition of adult ideas, the result is emotional or mental disturbance. The stimulation of children’s creative abilities minimizes such disturbances. (Efland, 1990, p. 235)

These thoughts seem to recall Dewey’s view of transforming emotion into expression and Naumburg’s theory of the value of teaching the arts. Lowenfeld also believed that if a child is given aesthetic experience, he will grow up more creatively
and will apply his experience in the arts to life situations. He believed teachers with minimal knowledge of art could teach art if they learned to motivate children and if they had realistic expectations of what children might accomplish at each stage of development. Lowenfeld’s child-centered instructional methods had a profound affect on art education in the classrooms of American schools.

Even though there were other influences in education prior to World War II, the child-centered movement was the dominant movement in the art education classrooms and also in art education theory. However, after World War II, even though the child-centered movement remained dominant in the classroom, art education theory was overwhelmed by the scientific approach. During the late 1950s, the Soviet Union appeared to be ahead of America in the space race. The goal for education suddenly became the strengthening of mathematics and sciences in the schools and after 1957, science provided the model of curriculum reform for general education, including art education. Scientists, educators, and scholars gathered at a conference held on Cape Cod at Woods Hole in 1959 to discuss how to improve education in science and mathematics in primary and secondary schools. In his report on the Woods Hole Conference, *The Process of Education*, cognitive psychologist, Jerome Bruner defined the structure of the discipline. Structures of discipline referred to structures of knowledge which enabled learners to achieve mastery of a subject matter (Efland, 1990, p. 263). Bruner believes that disciplines are the heart of the curriculum and in every discipline there is a “dualism in our education ideal, a striving for balance between . . . the useful and the
ornamental" (Bruner, p. 4). Bruner's awareness of the tension between the useful and ornamental raised issues that art educators had long been familiar with in their struggle to overcome the definition of art education as not merely ornamental. According to Bruner, curricula should be designed with regard to both structure and coverage.

The focus of curriculum reform based on disciplines established hierarchies of the subjects in the curriculum. Some studies became disciplines, and others were only subjects. A subject could be defined as an accumulation of materials. The arts had to become disciplines or lose their legitimacy (Efland, 1990, p. 241). The two main reactions within the art education community were to argue that, first, art is important because it enables creative problem-solving skills and, second, art education should become involved in the reform movement and base its structure on the disciplines. By 1962, Bruner's ideas about the disciplinary nature of knowledge were having an impact on art education (Efland, 1990, pp. 237-238).

To return to our history, it is at this point in the development of art education, two figures emerge who are central to this study. One figure is Howard Gardner, who received his education at Harvard University where he studied with cognitive scientist, Jerome Bruner. Gardner began his career in research at Harvard and more recently has become a professor of education. The other figure is Elliot Eisner who received his education at the University of Chicago where he was mentored by behavior psychologist, Benjamin Bloom. Eisner began his career at Stanford University as a professor of art education.
Eisner acknowledges a debt to the Woods Hole Conference and to cognitive psychologist, Bruner, in his development of his DBAE theory. For instance, he describes the various precursors to his theory in this manner:

the theoretical view developed in the Woods Hole Conference in 1959, distilled for educators by Bruner, translated for art education by Barkan, and developed in curriculum materials by Eisner... is currently being promulgated by the J. Paul Getty Trust under the title of discipline-based art education. (Eisner, 1984b, p. 261)

In addition to its importance to education, the Woods Hole conference was very important to educational psychology. According to Howard Gardner, the "cognitive revolution" was introduced to the field of education at this conference (Davis and Gardner, p. 113). The cognitive psychologists wanted to go beyond behaviorism; they wanted to delve further into the workings of the brain and learning process than merely observing exterior behavior. By the late 1950s digital computers had developed to the point that scientists began to compare the information processing ability of the computer with the workings of the human brain. It serves as a model and testing ground for the investigation of such intelligent functions as problem solving and logical reasoning (Davis and Gardner, p. 96).

The computer serves, in the first place, as an "existence-proof": if a man-made machine can be said to reason, have goals, revise its behavior, transform information, and the like, human beings certainly deserve to be characterized in the same way. There is little doubt that the invention of computers in the 1930s and 1940s, and demonstrations of "thinking" in the computer in the 1950s, were powerfully liberating to the scholars concerned with explaining the human mind. (Gardner, 1985, p. 40)
The Woods Hole Conference was so successful to education in general, that President Kennedy, in 1961, appointed a panel to look into the lack of balance in federal assistance to the arts compared to science and asked whether the curriculum reform as it had developed in the sciences could be applied to the arts. A series of 17 conferences were held between 1964 and 1965 to discuss these curricula issues. The most important conference was held at Penn State in 1965 where scholars and educators gathered. The Penn State conference did for art education what the Woods Hole conference did for education in general. By this time, other scholars recognized Eisner as a supporter of a discipline structure in art education. "Eisner . . . was influential in redirecting the attention of the field from a single-minded preoccupation with children's self-expression to an emphasis on the content to be taught in art" (Efland, 1990, p. 235, 236).

In the 1960s, both Gardner and Eisner began working with art education theories, Gardner with Project Zero and Eisner with a discipline-based theory. By this time, Eisner was a leader in the movement to make art education more like other courses in the curriculum. He believed that the child-centered or self-expression method is not the way art should be taught and suggested a structured curriculum supported by instructional materials. Writing in the 1965 NSSE yearbook, Eisner saw disciplines as the future for art education.

Art to many, has been equated with emotion, whereas other subject areas . . . have been considered products of thought. . . . If art activity is mediated activity, if it is intelligent activity carried out in behalf of aesthetic ends, then surely such activity can be made more intelligent through appropriate instruction. (NSSE, 1965, p. 321)
No single theory in art education has received as much attention as the theory now known as DBAE. It includes written curricula that are sequenced within and between grades and supposed to be implemented into schools on a district-wide basis. Learning outcomes would be predictable, identifiable, and assessed through formal measures. The structure of DBAE curricula, as well as other new theories of art education, appears to be influenced by the dominant movement within educational psychology, cognitive science.

I do believe that the making of art, its perception, and its comprehension are cognitive in character... [and it] requires sophisticated modes of thinking and represents, in many ways, the apotheosis of cognitive activity. (Eisner, 1990, pp. 425, 426)

The arts were of a different order than science but that did not mean that they were not disciplines. Eisner was among many scholars that believed art history and art criticism should be added to the art education curriculum. Even though there was a great deal of discussion about a more discipline-oriented curriculum in art education, there were not many implementation experiments at this time. The experiments that did take place had little success.

In the 1970s another science-oriented movement arose which was referred to as the accountability movement. This movement was spurred because of a general disenchantment with the discipline-oriented approach to curriculum reform and the perceived failure of the “new math” programs. In addition, the basis for the original push toward more scientifically oriented curriculum, which was America’s conceived
second place position in the "space race," had eased as America appeared to be leading space exploration when men had landed on the moon.

The accountability movement called for greater accountability in education. This movement took note of the continuing rise of educational costs in spite of a decline in school population. Tax payers increasingly resisted higher taxes to support educational programs. Accountability shifted the attention of educators to evaluation and measurement. With this shift came a shift in emphasis from inquiry and discovery to the mastery of existing facts. It precipitated the move toward instructional objectives. Art education literature became devoted instructional objectives, competency-based teacher education, and evaluation. Also throughout the 1970s there was an emphasis on writing behavioral objectives as a basis for curriculum development and evaluation in art education (Efland, 1990, pp. 248-249).

Accountability assumes that management of learning by behavioral objectives is the application of scientific technology to educational problems. To the art educators interested in this movement, stating objectives in behavioral terms was a demonstration of commitment to rationality and precision (Efland, 1990, p. 249). Learning tasks that are standardized are easier to assess than one-of-a-kind or self-expressive tasks found in the teaching of art. With a shift to preestablished instructional objectives comes a changed view of knowledge. Knowledge is something already known by the teacher rather than
something that can be the result of the student’s own intellectual activity. Educational success was defined by how much of a teacher’s knowledge was passed on to the student . . . not by the discoveries of the student. (Efland, 1990, p. 262)

**Contemporary Scene**

The current scene in art education in America’s public schools has been generally consistent over the last decade. The most widely accepted method of teaching art in the public schools in America is usually referred to as the creative self-expressive method. At the younger grades, artistic instruction is usually provided by the regular classroom teacher, and in general it focuses on artistic production and resembles child-centeredness of self-expressive methods. When teachers are gifted, productions can be at a high level, but for the most part are not. By middle school years, arts education declines in frequency and by high school, only a minority of children have any arts education. In high schools, specialists handle the art instruction. Other than a few exceptions, production continues to be the main focus. There are only scattered attempts to teach children art history (Gardner, 1993a, p. 140-141). According to Eisner, today on the average, elementary teachers devote only 4% of school time each week to instruction in the fine arts. He also believes the time that is provided is not prime time, such as the time that “so-called cognitive subjects” command. For the fine arts, Friday afternoons are very popular (Eisner, 1986, p. 58).

Art education has been declining; both in quantity and quality time in the curriculum. Theorists believe they can overcome the reduction and lack of
emphasis on art education in the schools. Gardner offers one solution and Eisner offers another.

In 1985, Gardner began his Arts PROPEL project in the Pittsburgh Public Schools. Arts PROPEL is the implementation in the classroom of an art education theory that was developed at Harvard University by Howard Gardner and other researchers working in Project Zero. Originally Arts PROPEL’s goal was to design assessment instruments which could document artistic learning. However, Gardner soon learned it was pointless to assess competencies unless students had significant experience working directly with artistic media. Therefore, he revised goals of the project to devising curriculum modules and linking these to assessment instruments (Gardner, 1993, p. 144).

Eisner’s solution to the decline of art education in the school was DBAE (discipline-based art education). DBAE became a strong movement in art education in the 1980s. Its roots, however, are in the 1960s with curriculum reforms centered on disciplines. DBAE is based on a four-part curriculum: art criticism, art history, art aesthetics, and art studio. Three of these areas were a part of the 1960s curricula; in the 1980s aesthetics was added to the “new” DBAE. Interest in DBAE has grown rapidly since the early 1980s. DBAE in its current form holds that art is a subject with content that can be taught and learned in ways that resemble how other subjects are taught in schools. Expectations of a DBAE program are that:
As we shall see in Chapter Three, DBAE is criticized because of a "tendency to see art education as a study of past cultural achievements certified by credentialed experts" and because of a tendency to make art education a passive form of learning (Efland, 1990, p. 254).

Both Gardner and Eisner claim their programs are based on cognitive science. However, there are important differences between the art program designed by Gardner and that designed by Eisner, especially in regard to the amount of time spent on production in the classroom. Gardner believes that production should be central in art education, especially in younger grades. He feels children learn best when they are actively involved in creating their subject matter (Gardner, 1993, p. 141). Eisner, on the other hand, believes that classroom work should not be devoted primarily to production of art but should be divided among art history, criticism, aesthetics, and production (Eisner, 1991b, p. 174).

In another area where they differ, Eisner believes that sequential curriculum is important to art education, while Gardner believes the nature of learning in the arts is spiral rather than sequential and it is not of benefit to have sequenced learning experiences within and between grade levels. The sequential curriculum is an idea popular with behaviorists, who argue that learning is the change of individual isolated behaviors that occur in a step by step fashion. The conception of
curriculum, on the other hand, was introduced by Dewey and made popular by the cognitive scientist, Jerome Bruner. In this curriculum, learning is thought of as a holistic encounter with problematic situations which are both defined and experimentally resolved by the learner using thought feeling and action. Change here can include change of attitude, change of values, change of thought processes as well as change of behavior. Both Gardner and Eisner believe assessment in the arts is important but differ on how that assessment should be accomplished. A more detailed comparison of these two programs (Arts PROPEL and DBAE) will follow in Chapter Four.

Gardner believes that communities provide little support for arts education and “only with the advent of the Getty Trust and parallel bodies, has there been a wider call for training in artistry outside the production sphere” (Gardner, 1993, p. 141). Eisner also credits the Getty Center with a major role in support of art education today.

For the first time American art educators have a major private foundation that cares about art education and that takes art educators seriously. I have worked with the Getty Center from the very beginning. . . . Before Getty entered the scene, efforts which I and others made to secure support for research and curriculum development in art education fell largely on deaf ears. (Eisner, 1989, p. 155)

Gardner explains that in the past few decades there has been a consensus developing within the professionals of art education that production alone will not be sufficient for art education.
While art educators differ in their assessment of the importance of artistic production—and its putative connection to creativity, more broadly framed—they concur that, for the majority of the population, such an exclusive emphasis no longer makes sense. (Gardner, 1993, p. 141)

Nearly all of the reform efforts in arts education include some discussion and analysis of artworks themselves and some appreciation of the cultural contexts in which the artworks are fashioned (Gardner, 1993, p. 141). Both DBAE and Arts PROPEL differ greatly from the creative self-expression approach to art education that has been dominant in practice for more than 40 years.

Because there is significant decline in art education, because art education theorists argue for a broad reform in the teaching of art in the schools, and because theorists represented by Gardner and Eisner do not agree on the program of reform, we need to understand the bases of the reform proposals. Consequently, this dissertation will examine the writing of Howard Gardner, a cognitive psychologist, and Elliot Eisner, an art educator. The writings of Gardner and Eisner are similar and yet their view of cognitive psychology as reflected in their writing and their art education programs are quite different. Cognitive psychology appears to be the model for their theories of art education, and yet in many ways their theories of art education echo the old debate between science and child-centered methods. On the surface, art education theory appears to be all science based. Other themes are present, although the language used to describe them has changed. If art education is to become a non-performance academic course, it is important to know under what influence such a theory is formed.
In what follows, Chapter Two will examine the writings and work of Howard Gardner; Chapter Three will examine the writings and work of Elliot Eisner. As DBAE only addresses the visual arts, only the visual arts material from Arts PROPEL will be examined. Chapter Four will present a comparison between the two individuals and their work, and Chapter Five will discuss new experiments in art education and where art education may go from here.
In my view, the ultimate goal of cognitive science should be—precisely—to provide a cogent scientific account of how human beings achieve their most remarkable symbolic products: how we come to compose symphonies, write poems, invent machines (including computers), or construct theories (including cognitive-scientific ones). (Gardner, 1985, p. 391)

The cognitive revolution in American educational psychology began during the 1950s. It has steadily gained acceptance since that time and has had a great deal of influence on all education in this country, including art education. Howard Gardner is a cognitive scientist and was trained as a clinical neuophysicologist. He acknowledges a cognitive scientist, Jerome Bruner, and a philosopher, Nelson Goodman, as early mentors (Gardner, 1989c, pp. 55, 64). Gardner began his career in research with Goodman, who was the first director of Project Zero, as a volunteer graduate student research assistant. Harvard University received a grant to begin this research project devoted to arts education. The name, Project Zero, was chosen because Goodman felt he and his assistants knew nothing about the subject (Gardner, 1989c, p. 64). Gardner now co-directs Project Zero.

This chapter will explore the cognitive revolution and its influence on art education as reflected in the contributions and views of Howard Gardner. We will look at Gardner's view of cognitive science, Gardner's proposals for reform of art education, which includes his ideas for evaluation in the arts, and finally we will look at Gardner's ideas for education. We shall see how, with the publication of Frames
of Mind in 1983, all of Gardner’s subsequent work grows out of his theory of multiple intelligences.

Gardner’s View of Cognitive Science

From the 1920s to the 1950s, American psychology was dominated by behaviorism. Behaviorists believe it is the environment that determines all organisms’ ability to behave in certain ways and to learn. Behaviorism, therefore, focused on observable behavior, or behavior seen from the outside in, and it became limited to behaviors humans share with animals (Davis and Gardner, p. 96). Behaviorists believe the entire organism is involved in the behavior and behavior is derived from stimuli. They reject internal causes for behavior and only examine gross behavior.

By the 1950s, cognitive psychology researchers argued the behaviorist approach was limiting and began to investigate intelligent functions such as problem solving and logical reasoning. Focusing on internal information processing, cognitive psychologists believe the use of symbols (such as language) distinguishes human beings from animals (Davis and Gardner, p. 96). Cognitive scientists look inside the organism and examine mental activities as a source of action. Thus, the main separation between behaviorists and cognitive scientists is that the behaviorists look to external causes for behavior while the cognitive scientists look to internal sources.

The cognitive revolution was introduced to the field of education at the Woods Hole Conference in 1959. Here, scientists, educators, and scholars
gathered to discuss how to improve education in science and mathematics in primary and secondary schools. Cognitive researchers were concerned with issues relating to the acquisition and employment of knowledge. Jerome Bruner, a cognitive psychologist, defined the structure of the discipline at this conference. According to Bruner, the structure of the discipline referred to structures of knowledge which enabled learners to achieve mastery of a subject matter (Efland, 1988, p. 263). All academic disciplines have structures that children can learn to ferret out and use—even across disciplines (Davis and Gardner, p. 113). Bruner describes the structuring of a curriculum in the following manner.

The early teaching of science and mathematics, social studies, and literature should be designed to teach these subjects with scrupulous intellectual honesty, but with an emphasis upon the intuitive grasp of ideas and upon the use of these basic ideas. A curriculum as it develops should revisit these basic ideas repeatedly, building upon them until the student has grasped the full apparatus that goes with them. (Bruner, p. 13)

Bruner uses as an example fourth-grade children. “They can grasp the idea of tragedy and the basic human plights represented in a myth. But they cannot put these ideas into formal language or manipulate them as grownups can” (Bruner, p. 13).

Two conferences were as important to art education as the Woods Hole conference was to science education; they were held at Penn State in 1965 and Aspen, Colorado, in 1977. At these conferences, art educators and scholars met to discuss a structured discipline for art education.
Scholars in the field wrestled with the challenge of deciding what these structures might comprise in art education, and how they would be implemented and reconciled with curriculum demands. Bruner had forged the gap between cognitive theory and educational practice, and art educators worked to redefine aesthetic education as the education of a process of thought. (Davis and Gardner, p. 113)

The cognitive science approach introduced new questions and new ways of thinking about art education. Because aesthetic thinking was a process of thought and a way of making meaning through symbols, it was like other cognitive processes; but because the "meanings it makes, like the symbols it uses, are unique, aesthetic thinking was also different from other cognitive processes" (Davis and Gardner, pp. 113-114). Art education had been created to an extent as an enterprise based in emotion and to best understand it, the student needs to be left free and untutored in expression. However, according to the cognitive view, artistic literacy had to be gained in the symbolic languages of art just as vocabulary and syntax are essential in language study (Davis and Gardner, p. 114).

According to Gardner, the arts, involve a communication of subjective knowledge between individuals through the creation of nontranslatable sensuous objects. If viewed in this way, the arts, with their combination of subjective and objective factors, tend to transcend the distinction between affect and cognition or between feeling and thought. Although the cognitive or knowing function is often contrasted with the affective or feeling function, they should not be disassociated. Disassociation threatens to mechanize science while at the same time sentimentalize art.
Certainly the arts are apprehended by the intellect, but just as assuredly they marshal affective responses and are concerned with the quality of feeling. Indeed, the differences in human reaction to persons and objects suggest that the quality of affect depends on the kind of object perceived, and its relationship to other persons or objects. (Gardner, 1973, p. 36)

The recognition of art as a cognitive process does not separate art from emotion; rather, it emphasizes the role of the intellect in making and perceiving art (Davis and Gardner, pp. 97-98).

The computer is central to the daily work of the cognitive psychologist. In addition to serving as a useful tool, the computer also serves as a model of human thought. Gardner personally has some reservations about using the computer as the model for human thought for two reasons. First, the computer simply executes what it has been programmed to execute without any standards of right and wrong entering into its performance. Also, Gardner believes there is a deep difference between biological and mechanical systems.

I find it distorted to conceive of human beings apart from their membership in a species that has evolved over the millennia, and as other than organisms who themselves develop according to a complex interaction between genetic proclivities and environmental process over a lifetime... adequate models of human thought and behavior will have to incorporate aspects of biological systems. (Gardner, 1985, p. 388)

For Gardner, the surrounding culture also plays a role in the process of thought.

As part of the cognitive challenge, it will also be necessary to relate a representational account of human intellectual achievements to what is known about their neural substrate and to what can be established about the role of the surrounding culture in sponsoring and then absorbing (or rejecting or refashioning) them. (Gardner, 1985, p. 392)
Cognitive psychology is rooted in classical philosophical issues. Gardner uses the example of Plato’s claim that all knowledge is recollected, explaining that this claim is also echoed in the claims of some cognitive researchers who assert there is an inborn language acquisition device (Davis and Gardner p. 98).

Gardner believes Jean Piaget has had a great influence on the development of cognitive psychology, even though the cognitive revolution was not initially constructed in developmental terms. Although he carried out most of his work before the advent of computers, Piaget demonstrated other prerequisites for cognitive science. His view of cognitive development became central during the middle years of this century (Gardner, 1990, p. 15).

Piaget’s child moved from action upon objects to an abstract understanding of object (mental representation) upon which mental actions could be performed. Knowledge was hereby actively constructed by the child and organized into internal structures or versions of external reality known as schemata. (Davis and Gardner, p. 98)

Piaget’s ideas were rooted in classic philosophy. He evokes images of Plato’s philosopher king in his theory that children negotiate their ascent towards reason through four major invariant hierarchical stages. They are: (1) sensorimotor period; (2) symbolic or semiotic period; (3) concrete operations; and (4) formal operations (Davis and Gardner, p. 98).

Gardner (1990) also credits Piaget as investigators interested in human nature came to assume that the developmental approach was the proper one to assume with respect to children. For instance, Piaget conceived of drawing as a
"symbolic function en route to and in service of mental representation" (Davis and Gardner, p. 98).

In sharp contrast to earlier behavioristic sentiments, scientists reached consensus that growth is more than simple change over time; that learning is more than mere association or simple "impressions from the environment"; that human cognition cannot simply be extrapolated from studies of animal cognition; and that children themselves pass through a number of qualitatively different stages of understanding. (Gardner, 1990, pp. 14-15)

Growth reflects a complex interaction between genetic predisposition and environmental changes. According to Gardner, "individuals do not develop merely by existing, or growing older, or becoming larger; they must undergo certain pivotal experiences that result in periodic reorganizations of their knowledge and understanding" (Gardner, 1990, p. 15). A developmental framework can also be applied to an individual's productions over time, including artistic ones.

Gardner, however, became convinced in his own studies of the development and the breakdown of cognitive and symbol-using capacities, that the Piagetian view of intellect was, in his view, flawed (Gardner and Hatch, p. 5).

Whereas Piaget had conceptualized all aspects of symbol use as part of a single "semiotic function," empirical evidence was accruing that the human mind may be quite modular in design. That is, separate psychological processes appear to be involved in dealing with linguistic, numerical, pictorial, gestural, and other kinds of symbolic systems. Individuals may be precocious with one form of symbol use, without any necessary carryover to other forms. (Gardner and Hatch, p. 5)

Gardner believes Piaget was actually studying the development of the logical-mathematical intelligence.
Common to most versions of cognitive psychology is the need to explain the variety of human behavior, action, and thought. Cognitive scientists believe that it is necessary to postulate there is an analytic process of analysis which can be called the *level of representation*. One way to describe the “level of representation” is to compare behaviorism with cognitive science. In an organism, behaviorism focuses on input (physical perception of stimuli) and output (behavior). In cognitive science, by contrast, there is an argument for a third or intervening process of analysis they call the level of representation. It is what happens between input and output.

When working at this level, a scientist traffics in such representational entities as symbols, rules, images—the stuff of representation which is found between input and output—and in addition, explores the ways in which these representational entities are joined, transformed, or contrasted with one another. (Gardner, 1985, p. 38)

When working at a representational level, the cognitive scientist claims that traditional ways of accounting for human thought are inadequate. According to Gardner,

> the cognitive scientist rests his discipline on the assumption that, for scientific purposes, human cognitive activity must be described in terms of symbols, schemas, images, ideas, and other forms of mental representation. (Gardner, 1985, p. 39)

There is some disagreement among cognitive scientists about the level of representation. Some believe there is only a single form of mental representation, others believe there are at least two forms, while still others believe there are multiple forms of mental representation. All cognitive scientists, however, accept the idea that mental processes are ultimately represented in the central nervous system (Gardner, 1985, p. 40).
Gardner emphasizes the importance of exploring links between representational levels in cognitive research. He explains that in order for cognitive science to mature, linkage across representational levels is crucial.

Unless the significance of work in each science can be connected to that undertaken in neighboring areas, the significance (and the limitations) of that work cannot be appreciated. No one fears the demise of physics, chemistry, and biology; and yet each of these disciplines has vital, articulated, necessary links to the next level, through "borderland" disciplines like physical chemistry or biochemistry. (Gardner, 1985, p. 391)

The goal of the penetration of levels is not, so one discipline or level can eliminate the other but, rather, so that our understanding of a domain can touch on all relevant scientific perspectives and thus gain a more complete view.

Gardner explains that the mental machinery which constitutes or allows thought can be called "objective" representation. It should be distinguished from the "medium employed." This is the representation of a concept by a symbol, image, or action to oneself or in communication with others. "The knowledge reflected in a child's drawing is an example of the first understanding of representation (objective); the drawing itself is an example of the second (medium employed)" (Davis and Gardner, p. 97). In other words, the medium shapes the message or influences the shape of the message.

From the medium employed, we move to the symbols involved in the arts. Gardner believes the arts involve the use of certain sets of symbols in certain ways, for example, attending to fine details in a symbolic pattern or apprehending the expressive potential of particular symbolic configuration. "An individual who would
participate actively in the artistic process must learn to ‘read’ and ‘write’ in these
different symbolic systems (Gardner and Perkins, p. 158). Gardner views arts
education as the “imparting of literacy skills in the area of artistic symbolization”
(Gardner and Perkins, p. 158). An artistic reader should be able to read symbol
systems which are featured in the arts. An artistic reader should be able to
discriminate diverse styles in music or discern the allegoric content of a poem or
novel. An artistic writer should be able to use abstract forms and colors to suggest
moods (Gardner, 1989b, p. 168).

By focusing on artistic symbolization, it is also possible to demystify the
artistic process, or in other words, make it easier to understand. Gardner does not
deny the role of emotion in the arts. Rather the emotions are seen to function
cognitively “to guide the individual to make certain distinctions to recognize
affinities, to build up expectations and tensions that are then resolved” (Gardner,
1990, p. 21). Gardner believes that for an individual to participate meaningfully in
artistic perception she must learn to decode, or “read” various symbolic vehicles in
her culture.

Whatever the role of inspiration, mystery, or emotional catharsis in the
arts, these are much less readily dealt with in education than the
regular and systematic (if somewhat less provocative) processes of
symbolic cognition. (Gardner and Perkins, p. 159)

No symbol system is inherently artistic or non artistic. Rather, symbol systems are
mobilized to artistic ends when individuals exploit those systems in certain ways for
certain ends (Gardner, 1990, p. 21).
The development of skills in one symbol system cannot be applied to other artistic systems. Gardner believes "each artistic area exhibits its own characteristic developmental paths" (Gardner and Perkins, p. 159). Rather than thinking of cognition as the developing of a piece, "it is more accurate to view the intellect as having a number of separable components" (p. 159). Gardner refers to the development of several distinctive intelligences.

Gardner (1983) first presented his view of multiple intelligences in *Frames of Mind*. His aim was to broaden conceptions of intelligence to include "not only the results of paper-and-pencil tests but also knowledge of the human brain and sensitivity to the diversity of human cultures" (p. ix). Gardner's writing since that time has been devoted to how best to use his multiple intelligence theory in education and assessment in the arts. He also writes of his critical view of contemporary public education in America. These issues will be explored further in Chapter Four.

Gardner believes that if we are to understand the realm of human cognition, we must include a more universal set of competencies than we have considered in the past. It is also important to remain open to the possibility that most of these competencies are difficult to measure by standard methods, which rely on logical and linguistic abilities (Gardner, 1983, p. x). Humans have evolved over a long period of time to think in at least seven ways, which Gardner calls intelligences. He uses the word intelligence to describe these different and relatively autonomous human competencies.
I have formulated a definition of what I call an “intelligence.” An intelligence is the ability to solve problems, or to create products, that are valued within one or more cultural settings—a definition that says nothing about either the sources of these abilities or the proper means of “testing” them. (Gardner, 1983, p. x)

Gardner believes that the intelligence develops in distinctive ways and also has specific representations in the human nervous system. “The various human symbolic competencies can be mapped, at least roughly, onto different brain regions, across the two cerebral hemispheres, and within these cortical regions as well” (Gardner and Perkins, p. 160). A comprehensive science of life must account for the nature as well as the variety of human intelligences. Gardner believes that in view of recent progress in such areas as biochemistry, genetics, and neuophysiology, there is every reason to believe that the biological sciences will eventually be able to offer a cogent account of this intellectual phenomena (Gardner, 1983, p. 31).

Everyone has the potential to develop each of these intelligences, but we all begin and end with different profiles. Strength in one intelligence does not necessarily mean strength in another. According to Gardner, “educators who think of students as either smart or dumb are wrong. A person can be smart in one area and dumb in others” (Gardner, quoted in Brandt, p. 34). The human mind is capable of diverse forms of thinking, which have been variously called “modes,” “vectors,” or intelligences.

On some accounts these forms of thinking are based on sensory modes (like visual or auditory), while on other descriptions they are linked to particular symbol systems like language, logic, or picturing. According to this cognitive perspective, individuals have the potential
to develop competencies in each of these modes of thinking. (Gardner and Grunbaum, p. 8)

Gardner believes that all individuals, although different in their particular profile of cognitive modes, should be able to develop competence or literacy in each form of thinking. The seven intelligences suggested by Gardner are listed below together with the core components of that particular intelligence as well as a possible position of a person in possession of that particular intelligence (Gardner, 1993, pp. 8-9).

<table>
<thead>
<tr>
<th>Intelligence</th>
<th>Core Components</th>
<th>Position Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logical-mathematical</td>
<td>Sensitivity to, and capacity to discern, logical or numerical patterns; ability to handle long chains of reasoning.</td>
<td>(Scientist, Mathematician)</td>
</tr>
<tr>
<td>Linguistic</td>
<td>Sensitivity to the sounds, rhythms, and meanings of words; sensitivity to different functions of language.</td>
<td>(Poet, Journalist)</td>
</tr>
<tr>
<td>Musical</td>
<td>Abilities to produce and appreciate rhythm, pitch, and timbre; appreciation of the forms of musical expressiveness.</td>
<td>(Composer, Musician)</td>
</tr>
<tr>
<td>Spatial</td>
<td>Capacities to perceive the visual-spatial world accurately and to perform transformations on one's initial perceptions.</td>
<td>(Sculptor, Navigator)</td>
</tr>
<tr>
<td>Bodily-kinesthetic</td>
<td>Abilities to control one's body movements and to handle objects skillfully.</td>
<td>(Athlete, Dancer)</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>Capacities to discern and respond appropriately to the moods, temperaments, motivations, and desires of other people.</td>
<td>(Salesman, Therapist)</td>
</tr>
<tr>
<td>Intrapersonal</td>
<td>Access to one's own feelings and the ability to discriminate among them and draw upon them to guide behavior; knowledge of one's own strengths, weaknesses, desires, and intelligences.</td>
<td>(Person with detailed, accurate self-knowledge)</td>
</tr>
</tbody>
</table>
Gardner thinks of intelligences as "raw, biological potentials," which seldom function in pure form. In almost everyone, intelligences work together to solve problems and yield results (Gardner, 1993, p. 9).

It becomes clear when looking at the capacities of each intelligence that few (if any) occupations rely on just one intelligence—most are a blend of intelligences, such as, the surgeon must have both dexterity and spatial intelligence (Gardner and Hatch, pp. 6-7). Each intelligence has its own peculiar trajectory and no two forms of thinking are exactly comparable (Brandt, p. 33).

There is no inherently artistic or nonartistic intelligence; rather, each form of intelligence can be directed toward artistic ends. Intelligences function artistically (or nonartistically) to the extent that they exploit certain properties of a symbol system (Gardner, 1993, p. 46).

The symbols entailed in that form of knowledge may, but need not, be marshaled in an aesthetic fashion. Thus, linguistic intelligence can be used in ordinary conversation or for the purpose of authoring legal briefs; in neither case is language being employed aesthetically. The same intelligence can be used for writing poems or novels, in which case it is being deployed aesthetically. . . . Logical-mathematical intelligence can be directed in an aesthetic vein (as when one proof is deemed more elegant than another. (Gardner, 1989a, p. 74)

Also, Gardner stresses whether an intelligence is mobilized for aesthetic or non-aesthetic ends is a personal or cultural decision, not an absolute imperative (Gardner and Perkins, p. 159).

Gardner explains that the theory of multiple intelligences was designed primarily for two purposes:
1) to synthesize a diverse set of findings about human cognition into a
form which made neurobiological and cultural sense; and 2) to provide
a way of thinking which contrasts with the widespread belief in a single
intelligence, which can be adequately assessed by paper-and-pencil
"intelligence tests." (Gardner, 1989a, p. 74)

While not originally conceived as an educational contribution, it has interested
educators and now there are many attempts under way to design educational
programs with this particular view of the human mind.

**Gardner's Applications of Cognitive Science**

Gardner co-directs a research project through Harvard University called
Project Zero, where he has been involved in research since the 1960s. From
Project Zero have come several experimental teaching projects, including the Arts
PROPEL project in Pittsburgh. Project Spectrum focuses on identification and
fostering of multiple intelligences in young children. Another teaching project is Key
School in Indianapolis which focuses on student projects in elementary grades.
Started by eight teachers from the Indianapolis Public Schools who were interested
in the multiple intelligence theory, Key School is an inner-city public options school.
Another teaching project is the PIFS (Practical Intelligences for School) Project. It is
an attempt to prepare students to master the challenging environments of middle
and high schools (Gardner, 1993, p. 67). Project Zero has pioneered in the study of
cortical representations of different artistic symbolic skills. Part of the work at
Project Zero is to define each area of intelligence and find the best ways to assess
aptitude and achievement in each. There is also an interest in which forms of
intelligence are important in the various arts.
At Project Zero, artistic thinking is seen as a distinctive way of using the mind. Gardner feels that this distinctive way of using the mind is usually downplayed in schools.

You could work with mathematics or language for the rest of your life, and it would not affect your ability to deal with music. . . . Abilities involved in dealing with the visual arts—with sculpture or painting, with dance, mime, or use of the body . . . all represent separate sets of cognitive skills. If we eliminate those areas from the curriculum, we are in effect shortchanging the mind. (Gardner, quoted in Brandt, p. 30)

Gardner (1990) stresses that artistry is seen primarily as an arena of human symbol use. He explains that at Project Zero there is no attempt to deny the arts involve emotions, that they induce feelings of mystery, or that they have a spiritual dimension. He adds, however, that emotions are seen to function cognitively. Emotions guide an individual to make certain distinctions, to recognize affinities, to build up expectations and tensions that are then resolved (p. 21).

Human artistry is viewed first and foremost as an activity of the mind, an activity that involves the use of an transformation of various kinds of symbols and systems of symbols. Individuals who wish to participate meaningfully in artistic perception must learn to decode, to "read," the various symbolic vehicles in their culture; individuals who wish to participate in artistic creation must learn how to manipulate, how to "write with" the various symbolic forms present in their culture; and, finally, individuals who wish to engage fully in the artistic realm must also gain mastery of certain central artistic concepts. (Gardner, 1990a, p. 21)

Gardner believes that just as one cannot assume that individuals will learn to read and write in their natural languages, so too, individuals can benefit from assistance in learning to "read" and "write" in the languages of the arts. Gardner uses the example of training developed by the Japanese master Suzuki for teaching
music to young children. The method works because Suzuki has identified the factors that matter in developing musical skill in early life. Methods could be developed in each intelligence, keeping in mind that each intelligence would require its own specific educational theory (Gardner, 1983, pp. 367-368).

Gardner suggests in order to increase an individual’s understanding of the arts, the student must be involved in them deeply over a significant period of time. There are also levels of development in artistic learning.

It is my belief that artistic forms of knowledge and expression are less sequential, more holistic and organic, than other forms of knowing and that to attempt to fragment them and break them into separate concepts or subdisciplines is especially risky. (Gardner, 1990, p. 54)

In addition, students need to be given opportunities and encouragement to reflect on their own understanding of the domain. Gardner compares this growth with the development of a connoisseur (Gardner, 1990, p. 29).

The approach to art education taken at Project Zero grows out of the child’s actual experience with the arts. Reflection and perception is a part of artistic activity. For instance, a song that all children know, “Twinkle, Twinkle,” can be used to demonstrate theme and variation. First make sure that children can sing or play the song on a kazoo, then have them do it in different ways: such as to do it sad, do it happy, do it spring, do it winter, etc. Then show them how Mozart wrote variations on the same song. The children will be interested because they have been confronting the same problem as Mozart (Gardner, quoted in Brandt, p. 33).

An example of this approach in the visual arts can be seen in the “Self-Portrait” domain project in Arts PROPEL (Domain projects will be discussed in
Students are asked to produce a self-portrait. During three, seventy-five minute class periods, students learn the position, size and relationships which exist among the parts of the human face. Students are introduced to the relationships of the "average" face; then asked to create an accurate proportion map of their own face. They are challenged to create a "monster" by altering the proportion, size and shape relationships of the human head. Students are then introduced to the work of selected artists who have altered human proportion to create a specific effect (Project Zero, Harvard Graduate School of Education, p. 48). In this example as in the example from music, students first have production experiences, and then move to a deeper understanding of that experience through reflection. Again, the students will be interested because they have faced the same problem.

Gardner feels that assessment of learning is crucial in the arts and is part of the work of Project Zero. "The success of an arts programme cannot be asserted or taken on faith" (Gardner, 1989b, p. 174). Also, assessment is important in order to justify the expense of offering artistic experiences in the public schools. It is, however, an error to try to assess the arts in the same way as other kinds of learning, that is, through multiple-choice tests. Assessments must respect the particular intelligences involved. For instance, musical skill should be assessed through musical means. Rather than crafting the curriculum to suit the assessment, we must develop assessments which do justice to whatever is most pivotal in an art form.
Artistic learning does not merely entail the mastery of a set of skills or concepts. The arts are also deeply personal areas, where students encounter their own feelings as well as those of other individuals. Students need educational vehicles which allow them such exploration; they must see that personal reflection is a respected and important activity; and their privacy should not be violated. (Gardner, 1989b, p. 175)

Gardner considers personal reflection as an important part of artistic learning and it must be respected. It is not necessary to teach students artistic taste or value judgments directly. Rather, students should learn that the arts are permeated by issues of taste and values which matter to anyone interested in the arts.

Arts PROPEL is a research project exploring the practical implementation of the ideas which grew from Project Zero. The Arts and Humanities Division of Rockefeller Foundation encourage and support Arts PROPEL in connection with Educational Testing Service and the Pittsburgh middle and senior high schools to develop ways to assess student achievement in the arts, such as, individuals' growth in learning in music, imaginative writing, and visual arts. These are areas neglected by most standard measures (Gardner and Hatch, pp. 5-7). Gardner reports that Arts PROPEL has been adopted for use by a variety of school systems around the country (Gardner, 1993a, p. 152).

While Gardner feels that students need to be introduced to the ways of thinking exhibited by individuals involved in the arts, he does not agree with the discipline-based approach to art education, which calls for less time in producing art and more time with verbal and analytic approaches emphasizing history, criticism and aesthetics (Gardner, 1989b, p. 173). Production activities ought to be central in
any art form, especially at younger ages. Gardner feels it would be tragic if a more conceptually based art education became yet another venue for verbally talented children to show their stuff while ceasing to provide a preserve for children with special visual, spatial, physical or personal talents (Gardner, 1990, p. 54). Rather than teaching in traditional ways of knowing, verbal-analytic and logical-mathematical forms,

artistic learning should grow from kids doing things: not just imitating, but actually drawing, dancing, performing, singing on their own. And I mean not just songs they've been taught, but singing their own compositions. (Gardner, quoted in Brandt, p. 32)

Production, according to Gardner, should be linked intrinsically to perception and reflection.

Perception means learning to see better, to hear better, to make finer discriminations, to see connections between things. Reflection means to be able to step back from both your production and your perceptions, and say, What am I doing? Why am I doing it? What am I learning? What am I trying to achieve? Am I being successful? How can I revise my performance in a desirable way? (Gardner, quoted in Brandt, p. 32)

Children learn best when they are actively involved in their subject matter. They want to have the opportunity to work directly with materials and media. Arts curricula need to be presented by teachers or other individuals with a deep knowledge of how to think in an artistic medium. In other words, education in the visual arts must occur at the hand and through the eyes of an individual who can think visually or spatially. Artistic learning should be organized around meaningful projects carried out over a significant time period. A sequential curriculum, because of its unilinear, step by step, progressive character is inappropriate in art education.
Artistic learning should involve a continuing exposure, at various developmental levels, to certain core concepts (like style, composition, or genre). Gardner believes that curricula should be rooted in the "spiral" aspect of artistic learning (Gardner, 1989b, p. 174). A spiral curriculum returns to central concepts with increasing complication.

For Arts PROPEL, Gardner elected to devise curriculum modules and link them to assessment instruments. An interdisciplinary team defines central competencies in an art form. In the visual arts, these competencies include sensitivity to style, appreciation of various compositional patterns, and the ability to plan and create work such as a portrait or still life.

Gardner favors "domain projects" which serve as goals of both curriculum and assessment. Domain projects feature sets of exercises and curriculum activities organized around a concept central to a specific artistic domain—such as graphic composition in visual arts. The drafts, sketches, and final products generated by these and other curriculum activities are collected in portfolios, which serve as a basis for assessment of growth by both the teacher and the student (Gardner, and Hatch, p. 7). Gardner strongly emphasizes that PROPEL classroom assessment in visual arts is not uniform or mechanical.

It is based on uniform principles, but in order to be both fruitful and manageable, it has to be shaped by each teacher to meet the needs of a particular situation. This takes considerable knowledge, thought and work on the part of the teacher. If the process is short-changed, one person's genuine assessment can too easily become another person's ill-fitting yardstick. (Project Zero, Harvard Graduate School of Education, p. 29)
The assessment models in Arts PROPEL are a collaborative effort between teachers, researchers and students.

Gardner explains what they did **NOT** want to do with assessment in Arts PROPEL:

- remake traditional achievement testing, in which the goal is to find out how much knowledge students have acquired and can recall in response to test questions;
- devise assessment that ignored the process of making art and focus only on end products;
- pursue program evaluation, in which groups of students scores are used to make comparisons among programs;
- identify the most "gifted" students in a particular group, or establish rank-ordered scores;
- standardize assessment across classes (Project Zero, Harvard Graduate School of Education, p. 28).

What is assessed in Arts PROPEL is a student's continuing growth in artistic understanding. This is revealed in the visual arts by ongoing assessment of drafts, sketches, and final products as well as other curriculum activities. This can be illustrated by looking at one of the domain projects in composition. This project is designed to help students notice how arrangements and interrelationships of shapes affect the composition and the impact of artistic works. Students are involved in this project for three sessions. "Students are given an opportunity to make compositional decisions and to reflect on the effects of such decisions in their works and in works created by acknowledged artistic masters" (Gardner, 1993, p. 145).
During the first session, they are given ten oddly shaped black geometric forms and asked to drop them on a piece of white paper. Then they are asked to repeat the exercises with a set of shapes which they find pleasing. Students then reflect on the differences between random and deliberate work and record their findings in a notebook. In the second session, the teacher introduces artistic works of different styles and periods that differ significantly from one another in the kinds of symmetry or balance which they epitomize or violate. Students are asked to describe the differences among these works as they appear to them and to develop a vocabulary that can capture these differences and convey them effectively to others. Achievements of harmony, cohesion, repetition, dominant forces, radial patterns, surprise, or tension are noted. Students are asked to describe the differences among these works. They are assigned the task of searching their daily environment for different compositions. In the third session, students report on their observations and are asked to repeat their first assignment developing a composition with black, odd shapes on white paper. They are then asked to report on their final work.

A student portfolio can be built over a period of time and is an excellent way to assess artistic learning. Various student efforts, including drafts, notes, false starts, things liked and not liked are accumulated. Both the teacher and the student can see what has been done and what has been learned. Some things can be specific, such as how many entries are made in their notebooks, how detailed they are, and how many different sources of information have been used in trying to
improve a work. A more difficult judgment is when a work has been deepened rather than just simply changed (Gardner, quoted in Brandt, p. 31). Rather than assessing a single finished work, with the portfolio, a student's ongoing growth in art understanding can be assessed.

Gardner feels standardized tests in the arts could be dispensed with altogether. "Instead rely on careful examinations of selected portfolios at selected sites" (Gardner and Grunbaum, p. 31). As much could be learned by examining twenty portfolios at twenty randomly selected schools as is currently learned by sampling 2500 students at several sites. "The artistic portfolio is key to any revised approach to assessment of artistic learning and achievement" (Gardner and Grunbaum, p. 31). In Chapter Four and Five, portfolio assessment will again be examined.

In recent years critics have expressed disappointment in American public schools. Gardner says that standardized tests are not a remedy for the problems of education. What is needed instead, is to get students more deeply interested and involved in their education. The students need to have projects to work on over longer periods of time and to get excited about. They also need to be stimulated to find things out on their own (Gardner, quoted in Brandt, p. 33).

In American public schools, he argues, intelligence has been appropriated to refer to a very narrow band of abilities, and if a person does not possess those abilities, they are labeled "stupid." The schools need to become more individual-centered. Ideally, each student should have a profile of his or her intelligences. A
student's profile of intelligences ought to have some effect on the way he or she
learns history (Gardner, quoted in Brandt, p. 34). We also need to be much broader
in what we assess and much more flexible in how we assess it. In the arts, there is
a relation of artistic activity to one's own personal life and values. Yet nearly all
assessment instruments seek to exorcise elements of personal importance, and "to
treat arts as if they are 'person' neutral and as 'value' neutral as the physical
sciences" (Gardner and Grunbaum, p. 33).

**Gardner's Conclusions**

Gardner reaches many conclusions about art education which come from his
experience of putting his theory into practice. The first is that the curriculum in art
education should not be designed by one group of individuals (even those
designated as art educators). Rather, "art education needs to be a cooperative
enterprise involving artists, teachers, administrators, researchers, and the students
themselves" (Gardner, 1989b, p. 175). Gardner feels that in recent decades,
developmentalists and educators have begun to communicate. This is a necessary
dialog, in his opinion, "if progress is to be made in devising effective methods of
education in fields ranging from physics to art education" (Gardner, 1990, p. 27).

Even with this new spirit of communication, Gardner still believes that no art form,
for instance, visual arts, has any intrinsic value over another.

At the risk of offending many visual art educators, I assert that
students should all have extended exposure to some art form, but that
need not be one of the visual arts. . . . I would rather have an
individual well-versed in music, dance, or drama than one with a
smattering of knowledge across the several lively arts. The former
student will know what it is to 'think' in an art form and will retain the
option of assimilating other arts forms in later life. (Gardner, 1989b, p. 175)

The way students think is an area in which Gardner has special interest. He draws from developmental and educational studies and suggests the existence of at least five different kinds of knowledge that any individual growing up in a schooled environment must attempt to master (Gardner, 1990, p. 37). The first is intuitive knowledge. This is knowledge acquired by interaction with people and physical objects. Next is symbolic knowledge. Symbolic knowledge includes recognition of the most widely used symbol systems of one's culture, that is, words, pictures, gestures, and musical patterns. The third form of knowledge is notational systems. This refers to more formal symbolic codes, such as, written language, including oral language; written numerical systems; written musical notational systems; and various codes, graphs and maps. The fourth form of knowledge is formal bodies of knowledge. This includes forms of knowledge available in precepts, myths and stories, and also science, history and literary texts. These forms of knowledge also include frameworks for thinking productively in different disciplines in order to attain deeper understandings of those disciplines. Gardner believes that without formal schooling there is little likelihood that the average individual will have opportunity to master them. The fifth form of knowledge is referred to as skilled knowledge. This includes games, leisure activities, art forms, religious procedures, and vocations, each of which includes gradation of competence from novice to master level (Gardner, 1990, pp. 37-41).
Integrating these various forms of knowledge into high levels of performance in disciplinary areas is difficult. Integration is important and necessary. Gardner believes "situated learning" can minimize disjunction among forms of knowing.

When students encounter the various forms of knowing operating together in a natural situation: when they see accomplished adult masters moving back and forth spontaneously among these forms; when they are themselves engaged in rich and engaging projects, which call upon a variety of modes of representation; when they have the opportunity to interact and communicate with individuals who evidence complementary forms of learning—these are the situations that facilitate a proper alignment among the various forms of knowledge. Often it is in the course of acquiring a complex, high-level skill that such combining occurs in a most ecologically reasonable manner. (Gardner, 1990, pp. 43-44)

The teaching of each form is also important. If the teacher is not confident about the relationship between these modes, the chances that forms of integrated knowing will result are slim.

Art education has been taught in the past as a studio course; that is, a course where there has been a concentration on production. Featured in this kind of art education are intuitive and craft forms of knowledge and much less emphasis on formal notation or on organized disciplinary knowledge and, therefore, little integration of forms of knowing (Gardner, 1990, p. 46). It is not a straightforward matter to integrate the forms of knowing with each other, but we cannot assume that students will be able to merge the various forms of knowing on their own.

One would need to integrate one's perceptual and motor knowledge of artistic production; the "reading" of the manifest representational content of works; various bodies of knowledge about art, including historical, critical, and philosophical investigations; and the kind of "hands-on" production skills that arise as a consequence of hundreds or thousands of hours at work with a medium . . . students would need
to synthesize their own perceptual, conceptual, and productive knowledge. (Gardner, 1990, p. 50)

Gardner (1990) outlines some of the things he feels will be necessary if art education is to move beyond self-expression. First, it is important that educators understand that findings from developmental, cognitive and educational psychology can be helpful. It is productive to place children in contact with peers who possess artistic knowledge and skill as well as the ability to synthesize various forms of knowledge about the arts. Young children should be exposed to significant artworks by adults. Gardner believes intuitive and first-order ways of knowing will operate without the need for anything except opportunities (p. 52).

There are risks involved in teaching formalized and disciplined art studies like art history and criticism to young children. While children can go beyond production and begin to enter discussions of the nature of art objects, discussions could proceed without making integral relationship to the child’s own art-making activity. However, it is important that talk about art does not dominate the arts curriculum. The development of an important way of knowing, the visual-spatial knowledge, begins to evolve in the young artist (Gardner, 1990, p. 52).

I would therefore urge a measured introduction to conceptual and formal knowledge about art during the early school years. During this time, it is important to ensure that children who want to be able to continue drawing, painting or modeling with clay have ample opportunity to do so, and to provide youngsters with the requisite technical skills and strategies so they can progress as aspiring young artists. This is an age where youngsters are capable of mastering techniques and styles; of learning more difficult approaches, such as those of perspective; and of becoming involved in apprentice-type relations, where they can acquire various kinds of skill and lore in a
more natural setting. I would not want to sacrifice this opportunity, which may never arise again. (Gardner, 1990, p. 52)

Gardner believes that a measured introduction to conceptual and formal knowledge about art during early school years, and when these introductions are made, it must be in connection with the child's own art production. Keeping artistic production central in art education is necessary because children need to experience the process of creating in order to understand the various forms when they see them.

Virtually definition in the visual arts is the capacity to deal with visual-spatial kinds of symbols—to think in terms of forms, what they represent, what feelings they can express, how they can be composed and combined, and what multiple forms of significance they can embody. (Gardner, 1990, p. 54)

Gardner approvingly quotes from Eisner (1972) "talking about art is an ancillary form of knowledge and should not be a substitute for thinking and problem solving in the medium itself" (Gardner, 1990, p. 54). Gardner's approval is fully compatible with his own emphasis on artistic production. What is interesting to note is Eisner's emphasis on production, which we will see in Chapter Three does not fit as closely with his ideas of art education.

Gardner explains that visual-spatial forms of knowing is in danger of being overwhelmed by verbal modes of symbolization. There are many students who possess this particular form of knowledge and lack equivalent linguistic and logical skills.

It would be a tragedy if a more conceptually based art education became another venue for verbally talented children to "show their
Gardner believes that artistic forms of knowledge and expression are less sequential, more holistic and organic, than other forms of knowing and that to attempt to fragment them and to break them into separate concepts or subdisciplines is especially risky (Gardner, 1990, p. 54). This works out curricularly where production or performance is central to all activity.

From the first artistic encounters, one gains a sense of the nature of the enterprise of creating and reflecting; this sense is never wholly lost but continues to evolve throughout one's life, so long as one remains actively involved in artistic activities. It is important that the special nature of the arts is not sacrificed. Gardner believes we would do well to allow this form of understanding to infiltrate other areas of the curriculum. "The more that artistic activities and projects remain central... the more likely it is that students will come to appreciate and assimilate the special nature of artistic learning and artistic knowledge" (Gardner, 1990, p. 55).

Now we will examine Gardner's view of the ideal public school. Using multiple intelligences as a basis, Gardner has a design for an ideal school of the future which he calls an individual-centered school. It would recognize that not all of us learn in the same way and would be rich in assessment of individual abilities and proclivities.

It would seek to match individuals not only to curricular areas, but also to particular ways of teaching those subjects. And after the first few grades, the school would also seek to match individuals with the various kinds of life and work options that are available in their culture. (Gardner, 1993, p. 10)
Early identification of strengths can be helpful in indicating what kinds of experiences children might profit from. Gardner also believes early identification of weaknesses can be equally important. “If a weakness is identified early, there is a chance to attend to it before it is too late, and to come up with alternative ways of teaching or of covering an important skill area” (Gardner, 1993, p. 11).

Gardner proposes assessment specialists. These people would use intelligence-fair instruments to try to understand the abilities and interests of the students. Assessments should aim at personal abilities beyond linguistic and logical-mathematical intelligences.

Once we begin to try to assess other kinds of intelligences directly, I am confident that particular students will reveal strengths in quite different areas, and the notion of general brightness will disappear or become greatly attenuated. (Gardner, 1993, p. 10)

Gardner also proposes a “student-curriculum broker.”

It would be his or her job to help match students' profiles, goals, and interests to particular curricula and to particular styles of learning. Incidentally, I think that the new interactive technologies offer considerable promise in this area: it will probably be much easier in the future for “brokers” to match individual students to ways of learning that prove comfortable for them. (Gardner, 1993, p. 10)

Gardner expresses concern for the student who does not shine in standardized tests. These children could be spotted and places found for them to shine.

Multiple intelligences theory suggests alternatives to current educational practices in several areas. Gardner feels the range of abilities can now be addressed for educational purposes. He also feels there could be an attendant shift in instructional conditions, leaving behind the typical classroom procedures which
rely solely upon linguistic and logical-mathematical symbol systems. "One cannot
develop musical intelligence, for example, merely by talking and writing about
music" (Blythe & Gardner, pp. 33-34). Multiple intelligences theory places emphasis
on learning in context. It also challenges the viability of standardized, machine-
scored, multiple-choice assessments. By proposing that each person possesses a
distinctive combination of intelligences, multiple intelligences theory emphasizes the
highly individualized ways in which people learn (Blythe & Gardner, pp. 33-34).

Gardner believes that educational systems should foster development of
each of several competencies or intelligences. Whether these intelligences are
used for artistic purposes, is a personal and cultural decision, but it is the
responsibility of the educational system to train aesthetic sensibilities in the several
relevant symbol systems, such as, language, picturing, music, and bodily gesture.
A system that focuses only on perception or only on production will miss significant
aspects of aesthetic literacy. “By the same token it becomes incumbent upon a
system bent on assessment to devise means of determining whether students are in
fact mastering aesthetic forms of thinking within these symbol systems” (Gardner
and Grunbaum, p. 12).

In addition, assessments should not rely on linguistic and logical modes,
instead of assessing within the relevant symbolic system itself.

Assessments must be "intelligence-fair" and "artistically-fair"--they
must look directly at the artistic intelligence in question, and not peer
at it through the "lenses" of language or logic. Indeed, even sensitivity
to poetry should be assessed primarily through aesthetic uses of
language, and not through neutral linguistic forms. (Gardner and
Grunbaum, p. 13)
It is in the process of working with artistic media that the artist develops skills of perception and skills of reflection. Gardner's goals for education and assessment of art are concentrated in production, perception, and reflection (Gardner and Grunbaum, p. 27). From Gardner's comments, these individual-centered schools would be aware of students with gifts in all intelligences. Artistically gifted students would have a place "to shine" in such a school. Now we will turn to Elliot Eisner and explore his view of cognitive science and art education.
The arts are cognitive activities, guided by human intelligence, that make unique forms of meaning possible. . . . The meanings secured through the arts require what might best be described as forms of artistic literacy, without which artistic meaning is impeded and the ability to use more conventional forms of expression is hampered. (Eisner, 1985a, p. 201)

In the late 1950s, the dominant topic of discussion among educational practitioners, researchers, and educational psychologists was how to improve the quality of the curriculum in America’s public schools especially the subjects of science and mathematics. Much of the discussions centered on cognitive science and the consequent view of subject matter as structures of discipline. The art education theorist Manual Barkan and Elliot Eisner began studying ways to bring art education into the cognitive “fold.” With the death of Barkan, Eisner became, by the early 1970s, the leading voice in the discipline-based art education movement, a position he has held to this day. This chapter will include a discussion of the efforts to move art education into a more structured, discipline-oriented mode focusing on the work of Elliot Eisner.

Eisner’s undergraduate background is in art. He was a commercial artist and art teacher prior to his graduate work in education at the University of Chicago School of Education. He acknowledges that Chicago’s Benjamin Bloom was a mentor. This mentorship is important in Eisner’s intellectual development because Bloom is widely accepted as a leader in the application of behavioral psychology to
curriculum and instruction. From his start at Chicago, Eisner went on to write about art education and much of his writing is specifically about DBAE (discipline-based art education). Eisner also has written a great deal about evaluation and assessment in education in general as well as in art education. It is through his writing about evaluation and assessment, that much of his view of cognitive science becomes clear. Eisner’s proposals for evaluation and assessment in the arts appear to be slightly modified versions of his proposals for evaluation and assessment in education more generally. Therefore, we will examine his broader proposals for education as well as his specific proposals for art education. First, we will explore Eisner’s view of cognitive science. Next we will examine his DBAE theory and application in the classroom, and finally, we will look at Eisner’s conception of evaluation in the arts and the consequences for educational reform. We shall see how, unlike Gardner, Eisner has no dominant idea that shapes all of his analysis; rather, he draws his ideas from a variety of sources and mixes them in various ways as he analyses various issues.

Eisner’s View of Cognitive Science

Discussions about cognition are common in the analyses of schooling; however, to talk about the cognitive character of the arts or the kind of meaning they convey is not particularly common (Eisner, 1986, p. 57). Importantly, Eisner believes that the making of art, its perception, and its comprehension are cognitive in character. Artistic creation requires, sophisticated modes of thinking and represents, in many ways, the apotheosis of cognitive activity. . . . To dismiss or diminish the
Eisner's emphasis on cognition, his selection of vocabulary, and his frequent references to cognitive science suggest Eisner's belief that he is basing his ideas on the field of cognitive science as it has developed since the 1950s. We will look at Eisner's view of cognition as it reveals much of his understanding of cognitive science.

According to Eisner, cognition refers to the process of knowing. Quoting the *Dictionary of Psychology*, Eisner (1985a) defines cognition as the "process through which the organism becomes aware of the environment" (p. 203). It is the process that makes awareness possible or, in other words, the process that allows us to distinguish one thing from another. Eisner explains, this process requires an active organism, an organism that must select from many qualities that constitute the environment. The selection process requires one to think (p. 203). For Eisner, thinking and experience cannot be separated. "I believe that no form of experience is possible without cognitive activity and such activity is itself what we mean by thinking" (Eisner, 1994a, p. 31).

Eisner explains that art education has been neglected by educational psychology because the former is not rooted in logic.

The models of mind that have typified U. S. educational psychology (particularly that aspect of psychology concerned with learning and knowing) have made tiny separations between thinking and feeling, feeling and acting and acting and thinking. . . . For some cognitive psychologists, thinking is a kind of inner speech that allows one to reason. Since reason is a condition of rationality and since reasoning is believed to require the logical treatment of works, operations of the
mind that do not employ logic are placed on the margins of rationality. (Eisner, 1985a, p. 210)

According to Eisner, "a view of cognition, that restricts thinking and knowing to forms of mentation that are exclusively discursive or mathematical leaves out far more than it includes" (Eisner, 1994a, p. 22). For him, the most important omission is art.

Eisner believes there is a tendency to regard cognition as independent of both sensory data and feeling, and he relates this tendency to Plato.

Plato regarded knowledge that was dependent on the senses as untrustworthy and believed affect to be a seductive distraction that kept one from knowing the truth. . . . The tendency to separate the cognitive from the affective is reflected in our separation of the mind from the body, of thinking from feeling, and the way we have dichotomized the work of the head from the work of the hand. (Eisner, 1994a, p. 23)

Eisner explains the source of experience in order to provide links between the senses and cognition. The senses pick up information from the environment, yielding experience, and experience, in turn, leads to concept formation. He uses three terms frequently in his description of the source of experience; they are sensation, perception, and cognition. Eisner is unclear about his definition of these terms and says that distinctions among sensation, perception and cognition begin to blur once we recognize that perception is a cognitive event (Eisner, 1994a, p. 31).

It may be helpful here to briefly explain how, in general, the cognitive scientist views the process of perception. A perception is construed from sense data that the perceiver actively selects.
A person's perception of an event, then is essentially a constructive process within which the person infers a hypothesis by relating his sense data to his model of the world and then checks his hypothesis against additional properties of the event. Thus, a perceiver is viewed not as a passive, reactive organism but, rather, as a person who actively selects information, forms perceptual hypotheses, and on occasion distorts the environmental input in the interest of reducing surprise and attaining valued goals. (Bigge and Shermis, p. 127)

Now we will return to Eisner's view of this process. For Eisner, the senses have a crucial function in cognition. They bring awareness of the world we inhabit and act rather like an "information pickup system" (Eisner, 1994a, p. 17). The senses are selective in what they choose to pickup. "Each sensory system is constructed to pick up information about some, but not all, of the qualities that constitute the immediate environment" (Eisner, 1994a, p. 24). He believes the human organism can differentiate among the qualities of the environment, remember and recall them, and manipulate them in imagination. This process is biologically rooted. Eisner adds that we need an environmental trigger for the realization of what is "biologically latent" (Eisner, 1985a, p. 167).

Eisner believes the sensory systems have a fundamental function in concept formation. "No concepts can be formed without sensory information" (Eisner, 1985a, p. 203). According to Eisner, perception of the world is a product of mental activity and perception is always fragmented. "General configurations are formed—that is, built up from parts to wholes" (Eisner, 1985a, p. 203). Patterns that are formed in this way are concepts and they are root forms of experience. Eisner adds that concepts are not only linguistic but are also forms that take shape in any of the senses.
Concepts cannot be formed without sensory information, and without concepts formed as images, whether visual, auditory or in some other sensory form, words and other forms of representation have no meaning or human understanding. The senses function as resources through which our experience can be transformed into symbols. What we choose to symbolize is rooted in our experience, and our experience, both empirical and imaginative, is influenced (but not determined) by the acuteness of our senses.

The senses provide the material for the creation of consciousness, and, in turn, we use the content of consciousness and the sensory potential of various materials to mediate, transform, and transport our consciousness into worlds beyond ourselves (Eisner, 1994a, p. 17). What the sensory systems provide are “options for experience” that require a kind of cultivation in order to function. There is no guarantee such options will be taken or that the consciousness they make possible will be secured (Eisner, 1985a, p. 167). The ability to hear music or see a landscape are not automatically due to maturation. We must learn how to experience such qualities (Eisner, 1993a, p. 6). Imagination also plays a role for we are able to conceive what we have never experienced in the empirical world. “Images are themselves created out of the empirical qualities to which our senses are responsive” (Eisner, 1994a, p. 25).

Importantly, Eisner believes that knowing depends upon experience and experience cannot be separated from thinking. Thinking is not limited to mental operations confined to a single form. It is more diverse than the common view of it
as just internal speech. As mentioned before, Eisner does not believe the educational development of the senses occurs automatically as we mature. The use of the senses in experience is not an intuitive happening but, rather, is something that needs to be learned. The ability to use the "senses as mechanisms for articulation of thought" can be regarded as a form of literacy (Eisner, 1985a, pp. 166-167). Eisner explains that literacy means more than simply being able to read or to write or to cipher, it means

being able to secure or express meaning through what I shall call forms of representation. Literacy may be regarded as the generic process of being able to 'decode' or 'encode' the content of these forms. Because conception and expression are as diverse as any of the sensory modalities humans can use, literacy can be employed, developed, and refined within any of the forms of representation the sensory systems make possible. (Eisner, 1985a, pp. 166-167)

The failure to develop the forms of literacy the senses make possible can result in "sensory deprivation" (Eisner, 1985a, p. 167). The extent to which the sensory systems can be used depends upon the organism's prior experience. Experience is also linked to the process of increased sensory differentiation. The human is an "active agent that selects and organizes aspects of [the] world for cognition" (Eisner, 1994a, p. 26). Eisner, therefore, believes that humans have a hand in the selection and creation of experience. He adds, humans are not immune to atrophic processes, and that lack of opportunity to use certain capacities increases the likelihood that those capacities will decline. It is the task of education to develop this literacy.
For Eisner, cognition is not limited to words or numbers. The way in which the world is perceived or experienced is a result of a process of intelligence which is dependent upon the ability to abstract from the world certain features. Eisner refers to this process as "intelligent abstraction" (Eisner, 1980, p. 331).

Since we cannot ingest the world whole, we select from it, we organize our selections and we form such selections into concepts, concepts that might be visual, or numerical, verbal or auditory, tactile, or olfactory. Our sensory apparatus... provides the channels for contact and our intelligence selects and organizes; a process requiring abstraction from a multitude of possibilities open to us. (Eisner, 1980, p. 331)

Importantly, Eisner believes that because of the abstraction process, perception is a cognitive event and "construal, not discovery, is crucial" (Eisner, 1993b, p. 5).

Therefore, he believes humans have a hand in the selection and creation of a concept. To become aware of the world, two things must happen:

first, the qualities must be available for experiencing... Second, the individual must be able to 'read' their presence. When both of these conditions are met, the human being is capable of forming concepts of the world. These concepts take shape in the information that the senses have provided. (Eisner, 1985a, p. 203)

First an individual constructs conceptual forms on an internal level, then creates some public vehicle to convey the qualities of these experiences to others.

According to Eisner, the use of intelligence to encode and decode visual form is no less demanding than its use in history, or in music, or in mathematics. Forms of human thought are multiple and language in its conventional sense is only one among many of the forms that it employs (Eisner, 1994a, p. 31). The ability to transform images (whether visual, auditory, or in some other sensory form) into
public form requires the use of some medium and the skills necessary to treat these media so they convey or portray what has been conceptualized (Eisner, 1980, p. 331-332). As noted earlier, Eisner believes all concepts are basically sensory in character and, "concept formation requires the ability to perceive qualitative nuances in the qualitative world and to abstract their structural features for purposes of recall or imaginative manipulation" (Eisner, 1986, p. 64). As sensibility is refined, our ability to construct meaning within a domain increases. We must learn to hear music, to see the landscape painting, and to feel the qualities in a bolt of cloth. Learning how to experience means learning how to use your mind (Eisner, 1993b, p. 6). Thus learning to experience is achievement of impression, rather than expression.

To make these impressions public, Eisner turns to problems of expression. Generally he uses the term forms of representation when explaining expression and sometimes modes of portrayal as a synonym. The content of our consciousness is also a resource for the representation of experience. Representation is what confers a social dimension to cognition. Since forms of representation differ, experiences they make possible also differ. Different kinds of experience, in turn, lead to different meanings and different forms of understanding. Meaning is shaped by the form in which it appears. We use different forms of representation to construct meanings that might otherwise elude us (Eisner, 1993b, p. 6). It is useful to note in passing that Eisner does not use the term representation in exactly the same way as cognitive scientists do. The cognitive scientist uses the word
representation to refer to a mental representation or a private self-referring process. Eisner is using the word representation to refer to the process of making a concept into public form or the "process of transforming the contents of consciousness into a public form, so that [it] can be stabilized, inspected, edited, and shared with others" (Eisner, 1993b, p. 6).

For Eisner, representation includes not only spoken language, but also dance, visual arts, music, mathematics, poetry and literature. These various forms differ in the degree to which they are conventionally structured and rule-driven. In distinguishing art from say, mathematics, the arts seldom have the prescriptive explicitness of the more highly rule-governed forms of representation found in mathematics. "In artistic forms of representation cognitive skills different from those used in forms of representation that are rule-governed are cultivated" (Eisner, 1985a, p. 169). Different forms of representation allow humans to conceptualize and convey to others the kinds of meanings they wish to express. The process of selecting a form of representation serves as a vehicle for conveying what has been conceptualized and helps articulate conceptual forms.

While the capacities for meaning are a part of the biological constitution of the human organism, the extent to which those capacities are actualized depends upon the forms of representation that humans learn to use. (Eisner, 1985a, p. 169)

The selection and expression of a particular form of representation will be limited by the amount of skill an individual possesses. Eisner believes forms of representation allow us to create and enhance our lives as well as share them with others.
It may be helpful to explain that the cognitive scientist sees cognitive growth characterized by the "increasing independence of his responses from the immediate nature of the stimuli involved" (Bigge and Shermis, p. 127). Growth is seen in the individual's increasing capacity to use words and symbols and in increasing freedom from stimulus control "through mediating processes . . . that transform the stimulus prior to response" (Bigge and Shermis, p. 127).

Now we will return to Eisner's definition. The ability to construe meaning from a variety of forms of representation is literacy. Eisner explains the variety of forms in this manner:

because the characteristics of these forms vary, because they emphasize the use of different sensory modalities, because they employ different forms of syntax, because they are regulated and appraised by different criteria, the kinds of meaning one can secure from them also varies. (Eisner, 1980, p. 332)

The form of representation one chooses usually depends upon the medium in which the individual is working. Eisner quotes Howard Gardner with approval.

The actions one takes and the ideas one expresses are stabilized in the medium in which one works: one hears the music one plays, one reads the words one writes, one sees the images, one creates. (Eisner, 1994a, p. 43)

One can also conceptualize in one mode and express oneself in another. For instance, a shift can occur from a visual mode of conception to a verbal mode of expression, although the verbal expression of a visual conception is not, of course, an exact replication. The transactions among forms of representation and conception are not limited with the visual and the literary. Eisner believes an
individual without the capacity to use various forms of thought can have a cognitive handicap.

While the precise ways in which modes of cognitive interaction occur are not well understood, there is little question that such interaction occurs. Thus the inability to utilize certain modes of thought provides a cognitive handicap not only in those forms of representation where these modes of thought are used directly, but in other forms of representation where such forms of thought may be useful. (Eisner, 1980, p. 333)

Eisner believes that intelligence and forms of representation interact. For example, an author must be able to see or construe reality about a subject matter, and perceive the qualities of the characters or situations that he writes about.

Without the ability to see what is subtle or significant, the content of the literary work is limited, or at worst empty. But once having seen what is subtle or significant the writer must transform those forms of consciousness into a literary structure that gives them expression. (Eisner, 1980, p. 333)

The author's ability to perceive the world with sensitive intelligence provides the content that is transformed into forms of representation.

The kind of meaning or understanding individuals are able to secure from their experience is directly related to their ability to use the forms of representation that are available. Literacy, then, can be regarded as the ability to secure and convey meaning from patterned forms of expression. The failure to develop sensory aspects of literacy, for instance, the ability to encode and decode visual form, can result in the underdevelopment of the senses. According to Eisner, a major source of illiteracy is the failure of schools to provide the kinds of programs that would cultivate the sensory bases of literacy. The schools neglect the development of
many forms of representation that are available in the culture. We must learn how to use our senses most fully to have the richest experiences (Eisner, 1994a, p. x).

One of education's major aims should be the cultivation of multiple forms of the student's literacy and expand the varieties of meaning students can experience (Eisner, 1994a, p. x). A cultivation of wide forms of literacy is important, from great works of art to science.

To read those forms requires an understanding of their rules, their contexts and their syntactical structures. . . . Some meanings are better expressed in visual images, others in the use of number. . . . Artistic literacy is the means we use to experience the meaning that the works of . . . artists make possible. . . . Art helps us know what we cannot articulate. (Eisner, 1988b, p. 195)

Eisner believes the development of cognition as an educational goal is appropriate for schools. All subjects in the curriculum require cognition. Curriculum should allocate time for students to have the opportunity to develop varieties of literacies.

If it were true that some subjects were noncognitive and if one believed that schools should emphasize the development of cognitive ability, one could make a case for allocating prime time to content areas that were cognitive. This case cannot be made because the hard and fast distinction between what is cognitive and what is affective is itself faulty. There can be no affective activity without cognition. If to cognize is to know, then to have a feeling and not to know it is not to have it. At the very least, in order to have a feeling one must be able to distinguish between one state of being and another. The making of this distinction is the product of thinking, a product that itself represents a state of knowing. (Eisner, 1994a, p. 21)

Eisner, then, believes there is no affective (or emotional) thinking that is not cognitive and there can be no cognitive activity that is not also affective. “Affect and
cognition are not independent processes; nor are they processes that can be separated. They interpenetrate and are part of the same reality in human experience" (Eisner, 1994a, p. 21).

**Eisner's Applications of Cognitive Science**

Eisner uses his understanding of cognitive science as the basis for his interpretation of DBAE theory. For example, he acknowledges a debt to cognitive scientist, Bruner, in the development of his own ideas on DBAE. After Bruner defined the concept of the structure of the discipline at the Woods Hole Conference in 1959, he helped formulate a theory that would define art as a discipline. Eisner describes the sequence of events in this manner:

> the theoretical view developed in the Woods Hole Conference in 1959, distilled for educators by Bruner, translated for art education by Barkan, and developed into curriculum materials by Eisner (1968) is currently being promulgated by the J. Paul Getty Trust under the title of discipline-based art education. (Eisner, 1984b, p. 261)

The Penn State Seminar in 1965 was a pivotal one for art education. It was during this conference that the idea of teaching art as a structured discipline gained momentum. The purpose of this conference was an effort to apply Bruner's discipline theories to art education. The term *discipline* refers to fields of study that are marked by recognized communities of scholars or practitioners, established conceptual structures, and accepted methods of inquiry. Decisions with respect to topics such as curriculum, instruction, learning, and evaluation are based upon the belief that art should be an integral part of general education. (Clark, Day, and Greer, p. 130-131)
Eisner defines a discipline as a body of distinctive concepts and methods which organizes knowledge. Students of all ages can learn from thinking in a discipline. “Students should act like young chemists, physicists, and geographers to best understand what such disciplines have to offer” (Eisner, 1984b, p. 261).

Eisner sees the general discipline of art education divided into four component disciplines which are art history, criticism, aesthetics, and studio activities. According to Eisner, this orientation to art education does not aim at social, political or psychological development. It’s aim is to enhance the student’s understanding of art as a process. Studies in art history enable students to see how art and culture interact. Studies in art criticism sharpen visual skills and help students justify judgments they make about art, and studies in aesthetics should help students understand conceptions about the nature of art. Art production enables students to understand processes and techniques for creating art (Eisner, 1984b, p. 261).

It is assumed in a DBAE program, art is a discipline for study with content that can be taught and learned in ways that resemble other subjects in the curriculum. Expectations of a DBAE program are that teachers teach their students by using written sequentially organized curricula and evaluate student progress through appropriate methods. Goals, procedures, and evaluation are specific to the content of art but are consistent and compatible with those of general education (Clark, Day, and Greer, p. 131).
Eisner (1990) argues the programs that have existed in art education in America's schools “have often been educationally shallow,” and many art educators agree. In his view, DBAE offers students sequential learning of complex material based on art history, criticism, aesthetics, and production (pp. 424-425). In opposition to DBAE, the most widely accepted method of teaching art in the public schools in America usually is referred to as the creative self-expressive method. This approach emphasizes art production activities. “Art is seen as an instrument for developing what is assumed to be each child's inherent creativity and expressive abilities” (Clark, Day and Greer, p. 131). It may be helpful to explore the differences between the self-expressive method and DBAE.

A comparison of this creative self-expressive method and DBAE reveals many basic philosophical differences. Here we will focus on three key educational characteristics. First, the goals of a creative self-expressive art program are the development of creativity, self-expression, and personality integration; the focus is on the child. In contrast, the goals of DBAE are the development of commonly accepted understandings of art; the focus is upon art as a discipline of study. Second, the content of a creative self-expressive program is art making as self-expression using a variety of art materials and methods, and students learn how to manipulate art materials by experimentation. By contrast, the content for DBAE is the four disciplines of aesthetics, art criticism, art history, and art production. Third, curriculum in the creative self-expressive method is developed by individual teachers and is implemented in a nonsequential, nonarticulated manner. Again, by
contrast, DBAE curriculum is a written curriculum for sequential, cumulative,
articulated, district-wide implementation.

To elaborate on the differences between the two approaches, the conception
of the learner is quite different under these two methods of art instruction. In the
creative self-expressive method, learners are seen as innately creative and
expressive; they need nurture and guidance rather than instruction. In DBAE,
learners are students of art; in need of instruction to develop understandings of art.
In the creative self-expressive method, creativity, is seen as innate in the child and
developing naturally with encouragement and opportunity. In DBAE, however,
creativity is seen as unconventional behavior that requires the development of art
understanding through education. In Eisner's view, untutored childhood expression
is not regarded as creative.

The teacher's role also is different in these two methods. In both types of
programs the teacher provides motivation and support. In the creative self-
expressive method, the teacher does not impose adult concepts or images and is
careful not to inhibit the child's self-expression. In DBAE, the teacher helps the
child understand art concepts at the child's level, uses culturally valued adult art
images and encourages the child's artistic activity.

Implementation is also quite different with these two programs.
Implementation of the creative self-expressive method of art education can be
achieved in a single classroom and coordination among classrooms and schools is
not essential. On the other hand, DBAE requires district-wide participation for full
effect of sequence and articulation. Adult works of art are not necessarily studied in the creative self-expressive method as they might influence in a negative way, the child's self-expression and creative development. In DBAE, adult works are central to the study of art with adult images serving as the focus for integrating learning from the four art disciplines.

Evaluation under the creative self-expressive program is based on estimates of the child's growth in the process of art making. In the DBAE method, evaluation is based on achieving pre-established concrete goals, and evaluation is considered essential for confirming student progress and program effectiveness (Clark, Day, and Greer, pp. 133-134).

According to Eisner, DBAE is not a curriculum, but an approach to art education that (1) argues the importance of learning in four content areas, (2) values programs that have a sequential character, (3) embraces the ideas that art programs should be goal oriented (4) holds that goal oriented programs ought to be evaluated, and (5) believes that school districts as a whole should adopt a common approach to the achievement of these goals. (Eisner, 1988a, p. 11)

Eisner believes that sequence in art education curriculum is essential and inevitable.

Sequence pertains to the organization of activities so that they challenge, develop, and build upon the ideas and skills that students have previously acquired. Programs that have no sequential development are programs that are educationally static. (Eisner, 1988b, p. 193)

Eisner argues, sequence and continuity are important in DBAE curricula because of automaticity, that is, learning that one can call upon without conscious effort. "In the
arts automaticity allows students to attend to aesthetic matters because matters of technical control have been mastered" (Eisner, 1988b, p. 193).

Eisner's 1980s' version of DBAE brought many changes to the original version in the 1960s. For instance, the 1960s' version, was part of a more general curriculum reform movement while the 1980s' DBAE was a specific effort of curriculum reform in art education. A key feature of the 1960s' version, as it was of the curriculum reforms of the era, was that it was constructed to be "teacher proof." The 1980s' version recognizes the essential role of teachers and administrators in curriculum implementation. Eisner sums up the experience of the 1960s as follows: "it is clear that curricula cannot prescribe all that a teacher is to do; we have learned enough from the efforts to design teacher-proof curriculum to avoid such naive aspirations" (Eisner, 1988b, p. 192).

Not only are instructions provided to the teacher as to what shall be taught, in what order, to whom, but they also indicate how the materials are to be taught and often what specifically the teacher is to say to the students. (Eisner, 1984b, p. 264)

The 1960s' discipline-based curricula focuses on purity and abstraction of disciplined knowledge, while the 1980s' version focuses on integrated understandings of aesthetics, art criticism, art history, and art production. Eisner's first contribution to the discipline approach in art education in the mid-sixties was the Stanford's Kettering Project, a curriculum designed for use in elementary schools (Eisner, 1990, p. 424). Several other visual arts curriculum projects developed as a result of the 1965 Penn State Seminar. Each was designed for elementary grades, each offered sequence, and each attempted a balance among
the content components. There was only limited success of these projects because theories, plans and products of curriculum developers changed en route to the classroom and the fact that materials will probably be used in the classroom setting in different ways than developers originally intended.

One lesson we might learn from past attempts at curriculum reform is that no curriculum can be made "teacher-proof," and that good curriculum materials are those which can lend themselves to a variety of uses and instructional outcomes. (Efland, 1987, p. 90)

Discipline-centered curricula again became the reform of the 1980s, but, according to Eisner, it wasn't until the J. Paul Getty Trust became involved with art education by opening the Getty Center for Education in the Arts (known as the Getty Institute for the Arts as of July 1996) in 1982 that financial assistance gave the opportunity to work in a significant way with the ideas that had been around since the 1960s. In other words, the financial support of Getty, has helped DBAE become the leading art education curriculum reform. Without it, DBAE might well have disappeared as it did in the 1960s.

What the Getty Center for Education in the Arts provided was the endorsement and financial support needed to further this view, a view, incidentally, which is advanced by the National Art Education Association as well as by a variety of scholars in the field. (Eisner, 1990, p. 425)

Eisner believes the Getty Center is one of the most important sources of support.

The Center had the intelligence and the guts to take on a difficult job with sensitivity and insight, and to my mind, with effect. The Center focuses on fundamentals of curriculum and teaching, not simply on the sexy and superficial. (Eisner, 1988b, p. 186)

The Getty Center has elected to work with professionals committed to the long term improvement of the arts in education.
There is some criticism of DBAE. For instance, some critics believe that when art education is considered to be strictly a cognitive enterprise, it will be transformed into an academic study and thus, the very heart is taken out of it.

To acknowledge the cognitive dimension of experiences that have aesthetic quality is one thing. But it is something else to claim that the arts are dominantly cognitive activities or that an education in the arts if fundamentally a matter of acquiring cognitive understandings. However much thought may be involved in the arts, they are not cognitive activities in the sense that mathematics, physics and some kinds of philosophy are cognitive activities. (Armstine, p. 420)

There is also criticism of the theory of DBAE because of the absence of “authentic experience” (Burton, Lederman, and London, p. 37). Peter London points out that Eisner draws heavily upon Dewey when describing the importance of experience in art education, DBAE, however, is lacking in offering such experience to students. London says, Dewey explains experience as encountering something relevant to one’s own life. As London puts it,

it is precisely the absence of authentic experience which characterizes the DBAE strategy of teaching and curriculum formation. In DBAE there seem to be little in the way of encounters with the primary and elusive stuff of life. . . . Instead DBAE has a curriculum specialist designing a curriculum for a teacher, and a teacher teaching that curriculum to children who have had no say in its creation. . . . A proper education in the arts places the cultivation of creativity at the very center of the curriculum. (Burton, Lederman, and London, pp. 36-38)

Other critics argue that DBAE makes art resemble the rest of education with emphasis on sequenced instruction, predictable outcomes, and testable learning. Thus, the creativity is taken from the program. While agreeing that some art instruction is poor and needs improvement, these scholars believe there should not
be a sweeping indictment of arts education as currently practiced in the public schools.

Students sought asylum in the art studio, the theatre, the darkroom, the music room, and the dance studio. They sought asylum from the intellectual and emotional tyranny of the standard curriculum which had no patience for their own thoughts or for their need to learn about themselves and their relationship to the world about them. (Blodget, p. 41-42)

Feminists criticize DBAE because the study of art history, criticism and aesthetics has traditionally been dominated by white males. Further, the structures and methods of academic disciplines themselves often have screened out matters of importance to women (Garber, p. 210). Further, if DBAE bases evaluations in art education on reactions to and critiques of art works, they should take into consideration that viewer response can be affected by gender, class, and race. Cultural differences exist in individuals which, in turn, affect their responses to art. In addition, male artists are often portrayed as independent to the point of being able to separate themselves from their own history.

The appropriation of such mystical qualities of male artistic production and appreciation have resulted in piecemeal and superficial representations of women in mainstream tests because women typically do not fit into these models. (Freedman, p. 159)

Feminists also believe that "it is the masculine values that society respects, and it is the feminine values that it denigrates" (Huber, p. 37). Huber continues that art educators are trying to justify their work to a society which values scientific rational, or what is logical, objective, and measurable, at the expense of the creative, intuitive, subjective and unquantifiable.
DBAE is also criticized for its sole reliance on Western art. There is a
definite lack of multicultural appeal. Western art is too narrow for two reasons; first,
it depicts predominately white males; and second, it gives the viewer only a very
limited view of the world. This approach cannot offer students insights into the
aesthetic enjoyments they are now having (Amstine, p. 419).

Some in the art education field today are concerned that in our desire to
provide structure in our art programs and to secure academic legitimacy for art
education, the magic of art will be lost, and Eisner explicitly agrees with this view
(Eisner, 1988b, p. 197). Even more surprisingly, as Eisner defends the theory of
DBAE, that he has been so instrumental in publicizing, he sounds very much like
many of the critics of DBAE we have just looked at.

It is art that provides the temporary escape from the rule-governed
features of an overly verbal and numerical curriculum. . . . Schools are
. . . dominated by curricular tasks that are teacher directed and that
too often have one correct solution to every problem. . . . What
children desperately need is relief from the relentlessness of rule-
governed algorithms. What they need is the space, the place, and
most of all, the permission to follow the beat of their own drummer.
What children need is Lebensraum—room for living. The arts must not
become the lifeless, mechanistic, and dry academic study that has
befallen so much of what we teach at all levels of education. (Eisner,
1988b, p. 187)

We will explore this and other apparent contradictions in Eisner's views about the
consequences of DBAE in Chapter Four.

Eisner's Conclusions

As much of Eisner's conclusions about art education are revealed in his
writings about evaluation, these writings will be examined in some detail. Eisner's
writings about evaluation for education in general will be examined as well as those for art education. It appears that Eisner's ideas about art education evaluation are based on his ideas for evaluation in education in general. As we shall see, derivation of art education evaluation is important for understanding the implications of DBAE in the classroom.

Eisner urges that current methods of evaluation need to be broadened. Conventional methods of evaluation are designed to capture only a small portion of educational life (Eisner, 1985a, p. 174-176). “Approaches to evaluation should, I believe, be grounded in a view that regards their primary function as educational” (Eisner, 1994a, p. 11). In other words, evaluation design ought to enhance educational curricula.

According to Eisner, educational evaluation has been greatly influenced by the field of education psychology; and educational psychology, in turn, has been influenced by its most notable early leaders to create a science of education (Eisner, 1976, p. 235).

Measurement of achievement was not only possible; it was the only way to determine objectively if schools were productive. Taken in concert with curriculum development, educational management and the measurement of performance would provide a technology of practice that would take the guesswork out of teaching. (Eisner, 1991b, p. 170)

Eisner believes that when the efficiency movement in education aligned with Thorndike's suggestion of a scientifically developed curriculum, the result was a technological model for education. This model makes possible the measurement of achievement and efficiency. Eisner disagrees with the technological model for
several reasons. First, because scientific assumptions and scientifically oriented inquiry "aim at the search for laws or law-like generalizations, such inquiry tends to treat qualities of particular situations as instrumentalities" (Eisner, 1991b, p. 170). Also, the aim of the technological model is to achieve specific, measurable goals and eventually to specify behaviorally defined objectives for each student and implement scientifically tested teaching procedures through which those objectives could be achieved (Eisner, 1991b, pp. 170-171). Because of the preoccupation with the achievement of prespecified outcomes, American schools have become increasingly fragmented. There is pressure on teachers to become accountable and a tendency to break curricula into small units of instruction. The result of this fragmentation is to make it increasingly difficult for students to see how each piece is a part of the larger whole (Eisner, 1984a, p. 33).

Eisner believes the technological model is preoccupied with objectivity. As a result, unique qualities are neglected; poetic insight has little place in such a view. Finally, Eisner objects to the technological model because

as tests are developed to provide objective information about achievement of common objectives for students, they ineluctably control the content and form of the curriculum, influence the ways in which teachers teach, and drive the priorities teachers establish in their classrooms. (Eisner, 1991b, p. 172)

This rejection of objectivity inherent in the technological approach appears to contradict Eisner's own emphasis on objective understanding in his DBAE proposals. This apparent conflict in Eisner's view of assessment and curriculum will be discussed in further detail in chapter four.
Eisner believes it is only recently that there are efforts to distinguish between educational evaluation and educational psychology. In other words, educational evaluation tends to be based on the most current educational psychology. This leads to some important limitations. One limitation has been the tendency to evaluate the effects of programs on student behavior with little attention to the assessment and description of the environmental effects. Measurement of the extent to which objectives have been reached often distorts the very reality such procedures aim to describe. Because our present methods of evaluation are limited we frequently accept "the part for the whole" (Eisner, 1985a, p. 130). According to Eisner, one symbol system cannot provide the richness of view we need. A limited or partial view of the world results when an unbalance occurs in curriculum and evaluation. There has also been a tendency to reduce educational problems into forms that fit research paradigms and to give inadequate attention to distinguishing between findings that are statistically significant and those that are educationally significant (Eisner, 1985a, pp. 72-73).

Educational objectives are usually derived from curriculum theory, which assumes that it is possible to predict what the outcomes of instruction will be. Eisner believes that the process of instruction produces outcomes too numerous to be specified in behavioral terms in advance (Eisner, 1985a, p. 32). However, in some subject areas, where uniformity in response is desirable, it is possible to specify with great precision the particular operation or behavior the student is to perform after instruction. In the arts, such specification is frequently not possible.
Eisner believes when objectives dominate a teacher's activities, the present can be sacrificed for the future. For him, a model of evaluation or educational practice built upon the assumption that the quality of education is determined by measuring the achievement of prespecified objectives is one that is far too limited (Eisner, 1991b, p. 171).

What I have tried to do in my work is to explain the concept of educational objectives and loosen up and make more liberal the ways in which teachers and curriculum developers can think about what they do. I have tried in my work to explicate the concept educational objectives and to distinguish between three types of education objectives. (Eisner, 1973, p. 3)

The three types of objectives Eisner proposes are; the *instructional objective*, the *expressive objective*, and the *Type III objective* (Eisner appears to have named this third type of objective Type III because it is the third type of objective; he offers no explanation). The instructional objective is not open to alternative responses at all, the expressive objective is the most open to alternatives, and the Type III objective is in the middle. "Instructional objectives describe answers that are known in advance. . . . In Type III objectives, although the problem is known the solutions are not" (Eisner, 1985a, p. 78).

With three types of objectives we can now examine a curriculum, one developed either nationally or by the classroom teacher, to determine the extent to which objectives of each type are provided and the degree of emphasis devoted to each. (Eisner, 1985a, p. 79)

In order to be useful, Eisner says, instructional objectives should describe what the student is able to do. Both the behavior of the student and the content in which it is to be displayed are to be identified. The context for assessing behavior
is to be described and the instructional objective should be sufficiently specific to refer to observable behavior and not to non-empirical, mental events (Eisner, 1985a, p. 69). The rationale for the use of instructional objectives in curriculum planning and evaluation is straightforward: “one must know what it is that a student is able to do in order to determine the effectiveness of curriculum” (Eisner, 1985a, p. 77). According to Eisner, this idea was exemplified in the cognitive domain by the Behaviorist, Benjamin Bloom (*Taxonomy of educational objectives: The classification of educational goals*, 1956).

Eisner maintains he objects to the limitations of behavioral objectives as embodied in instructional objectives. The goal of behavioral objectives, he says, is to achieve predictable student behavior that exhibits no variance. Such behavior is not the goal of art education. Eisner repeatedly stresses he objects to the absence of objectives, behavioral or otherwise, in art education. He conceptualized a different kind of objective called the *expressive objective* to complement other behavioral objectives. This effort, he explains, is intended to provide balance to what he considers to be an extremely narrow vision of what education is and how planning for it should occur.

The expressive objective is an outcome of an activity planned by the teacher or the student which is designed not to lead the student to a particular goal or form of behavior but, rather, to forms of thinking-feeling-acting that are of his own making. (Eisner, 1985a, p. 77)

It is an outcome intended to produce a personal response from the student. It does not seek to anticipate what kind of particular response or product the student will produce. Instead it aims at constructing an encounter, creating a setting, forming a situation which will stimulate
diverse and largely unanticipated responses and solutions from students. . . . Within the same art program [instructional objectives and expressive objectives] can co-exist. (Eisner, 1973, p. 4)

The expressive curriculum activity is evocative rather than prescriptive and is intended to yield outcomes which are not prescribed or defined beforehand. The teacher must look back to evaluate what happened. With this objective, neither the parameters nor the specifications are given. The student could define his own problem or task and create his own solution.

Eisner also believes there are situations in art classes where the problems can be specified ahead of time, that can have an infinite number of possible solutions. For this kind of situation, Eisner calls for a Type III objective. An example of this type of objective would be: “build a clay structure using repetitive form that will convey a sense of loftiness to the viewer” (Eisner, 1985a, p. 78-79).

Curriculum can be examined with these three types of objectives in mind to determine to what extent objectives each type is used. The next step is to examine evaluation tools such as standardized tests to determine the extent to which they provide for items or tasks related to these objectives, and if they do not, we can build instruments appropriate for such objectives. . . . We can consciously begin to design learning activities within the parameters suggested by these types of objectives. (Eisner, 1985a, p. 79)

Eisner does not reject assessment by the use of standardized tests. Rather, he feels if these three kinds of objectives are used, standardized tests can be useful for assessment.

In artistic approaches to evaluation, we must heed the person and social; we need to know what the world is like to those in it. “Counting and measuring are not
precluded in such inquiry; they simply are not central to it" (Eisner, 1991b, p. 182).

Artistic approaches to evaluation assume that “knowledge is a verb, not a noun, and is rooted in experience, and experience is, at base, qualitative” (Eisner, 1991b, p. 183). Eisner relates being asked by other scholars whether his contribution has influenced the practice of evaluation. His answer,

I suppose it has. I suppose it contributed to the growing legitimacy that qualitative evaluation now enjoys. . . . It is a form of work that cannot be standardized or rule driven. . . . [I am reassured] that my work has been consequential, and that realization is both satisfying and motivating. (Eisner, 1991b, p. 185)

Eisner provides another manner in which to look at educational evaluation.

The aim of my earlier work was not primarily to express my discomfort with prevailing evaluation practices and the assumptions upon which they were built, but to provide another way to look at the process and aims of educational evaluation. (Eisner, 1991b, p. 173)

He explains that he proposed a model in his doctoral dissertation (a factor analytic study of children’s artistic creativity), which received the Palmer O. Johnson Memorial Award from the American Educational Research Association. He now calls this model educational connoisseurship and educational criticism (Eisner, 1991b, p. 173). His ideas come from long-standing practices in the arts, i.e., the connoisseur knows what she is looking at or listening to or reading, notices subtleties that count, and recognizes the importance of a painting, a poem or a symphony. Connoisseurship requires time and experience to acquire. It is essentially the art of appreciation and requires time and experience as well as active intelligence to acquire.
What is needed is a balanced curriculum complemented by a balanced approach to evaluation. Educational connoisseurship and educational criticism is a non-scientific approach to educational evaluation (Eisner, 1994a, p. 103). Eisner first proposed this model in 1976 and his views remain the same (Eisner 1976; 1991b).

If you believe in a set of ideas, it is important to stay with them even when the company is scarce. The field of education has moved in the direction that my work helped develop, and . . . I expect the momentum to continue. (Eisner, 1991b. p. 184)

It is connoisseurship that gives the experience with which we come to know an object or performance. To make this experience public requires the use of some form of representation. Criticism is the vehicle for this function.

A connoisseur is someone who has worked at the business of learning how to see, to hear, to read the image or text and who, as a result, can experience more of the work's qualities than most of us. . . . Thus, one might say that connoisseurship is related to the possession of perceptivity and perceptivity is as important in appreciating the significance of the students' comments, the quality of their essays, the performance of a teacher, and the character of a school as it is in the fields of art, music and literature. (Eisner, 1991b, p. 174)

Connoisseurship, then, "provides criticism with its subject matter, and critics provide a bridge for the rest of us " (Eisner, 1991b, p. 175). The critic has the ability to use language to make public what connoisseurship has revealed.

Educational critics talk and write about teaching, classrooms, schools, school districts, textbooks, school architecture, and students. Eisner explains that the aim of criticism is the enlargement of perception. Eisner describes three dimensions or aspects of educational criticism: description, interpretation, and evaluation. First,
description is used by the critic to enable others to grasp the scene. Second, interpretation is a process of accounting for that of which one has given an account. Interpretation also refers to the meaning of an event. He adds that “it should be recognized that there is no clear line to be drawn between description and interpretation” (Eisner, 1991b, p. 176). Eisner uses the example of the description of lips turned up at each end of the mouth can signify a smile or a smirk. The ability to distinguish the difference is critical for both students and teachers. Evaluation is the third aspect of education criticism and Eisner describes its function in this manner: “It has always been puzzling to me why the idea that evaluation was a critical element in any set of observations was not obvious to everyone. The essence of perception is its selectivity” (Eisner, 1991b, p. 176). Eisner explains that the connoisseur is not likely to describe everything in sight, but rather choose what she considers important. As the selective process is influenced by the values one brings to the classroom, the observer will see what she cares about. “Making value judgments about the educational import of what has been seen and rendered is one of the critical features of educational criticism, as it also must be in the conduct of conventional educational research” (Eisner, 1991b, p. 176-177).

One of the aims of educational research is to be able to generalize. Eisner believes educational researchers can make generalizations in ways that do not use random samples from a population and inferential statistics. Generalizing is an inherent aspect of all learning. Works of art can also generalize. Eisner calls this new dimension he developed of educational criticism thematics. Good educational
criticism has lessons to teach that go well beyond their particular subject matters. Themes of works can extend over time because they offer features of life that are as valid today as when they were created. "While a work addresses a particular, its meanings transcend any particular classroom. This transcendence allows us to learn from particular experiences" (Eisner, 1991b, p. 178). It is learning from particular experiences, through the process of analogy, that constitute our most useful generalizing capacities. According to Eisner, generalizing is an inherent aspect of all learning. He does not explain generalizing further, rather he says,

I do not want to get into an extended discussion of how humans generalize. We all generalize in order to survive. We all modify what we have learned from the past and select those aspects of it that are relevant for dealing with the present. We all consider aspects of the new situation in light of past experience and modify prior experience in light of the immediate context. (Eisner, 1991b, p. 178)

It is thematics, according to Eisner, that provide readers with the moral of the story. "Thematics represents the formal acknowledgment of a practice that permeates our daily lives and which has been, de facto, the way we use a part of social science inquiry in the context of schools" (Eisner, 1991b, p. 178). Eisner concludes that thematics "makes it clear that the lessons to be learned by studying cases pertain to cases beyond those studied" (Eisner, 1991b, p. 179).

Eisner believes we are moving closer and closer to a system of standards in an effort to make our schools more accountable and responsible. National standards are being formulated for the certification of teachers, for the content of curricula, and for the outcomes of teaching. To him, it is a mystery why it is thought an "appropriate cure for educational ills is a common examination for 47 million
students attending 108,000 schools overseen by 16,000 school boards located in fifty states serving a population as diverse as ours" (Eisner, 1994a, p. 2).

If national policy dictates that there will be uniform national standards for student performance, will there also be uniform national standards for the resources available to schools? To teachers? To administrators? Will the differences in performance between students living in well-heeled, upper-class suburbs and those living on the cusp of poverty in the nation's inner cities demonstrate the existing inequities in American education? (Eisner, 1995, p. 764) Eisner makes the point that inequities in our educational system will not be alleviated by bringing attention to them, but he gives no general suggestions for curriculum reform.

A standardized national curriculum is not far from a standardized national approach to educational accountability (Eisner, 1991b, p. 171). Believing that the desire to establish a common set of national educational standards is understandable, Eisner (1994a) offers an explanation of the recent drop in test scores to calm the fears of those who have lost confidence in our schools' capacity to deliver the "educational goods" (p. 3). SAT scores have dropped in recent years on both verbal and mathematical scores. Eisner believes that part of the reason could be the result of an expanding and more diverse population taking the examinations. Often inadequate analysis of educational statistics is done and simplified solutions are offered to complex educational problems.

Eisner thinks today's reform efforts echo reform movements of the past. Like the idea of national standards today, education goals in the 1960s focused on behavioral objectives as a method of accountability. The idea was to define our education goals operationally in terms that were sufficiently specific to determine
without ambiguity whether or not the student had achieved them (Eisner, 1995, p. 759). When speaking about reform in our schools, we use a language of change that reveals a "shallow and mechanistic conception of what real change requires" (Eisner, 1992a, p. 612). He recommends looking at schools with an "enlightened eye", that is, approaching educational research in a qualitative manner.

Eisner identifies five areas where reform will be needed if change is to be significant and lasting. They are: intentional, referring to what schools intend to accomplish; structural, referring to ways in which we have organized subjects, time and roles in the school; curricular, referring to the content that is provided; pedagogical, referring to aspects of educational practice; and finally, evaluative, referring to actual outcomes of schooling (Eisner, 1992a, p. 620-621). He defines areas where reform is needed rather than suggesting directions reform should take, an approach opposed to Gardner, who has defined specifically what reform should take place.

Eisner's theories of art education vary in several distinct and important ways from those of Gardner. Chapter Four will contain a comparison of the theories of Eisner and those of Gardner. There are also some interesting contradictions in the writing of Eisner which will also be discussed further in Chapter Four.
CHAPTER FOUR
COMPARISONS

This chapter will compare the work and writing of Howard Gardner and Elliot Eisner. On the surface, they are similar. For instance, both Gardner and Eisner see a need for the content of art education programs to be something more than production. Both also agree there is a need for assessment in the arts. They both use similar rhetoric when writing about their proposals for art education programs in the public schools. However, while the language they use is similar, their proposals are actually quite different. First we will briefly explore some of the areas where Gardner and Eisner are similar. Then we will examine how these programs differ as we compare how Gardner and Eisner define cognitive science and how Gardner and Eisner apply their understanding of cognitive science in their art education theories, respectively, Arts PROPEL and DBAE. Finally, we will compare the conclusions Gardner and Eisner reach as revealed in their writings about evaluation and assessment, national standards and reform.

Both of these scholars are very influential. They both acknowledge respect for the other's work. But while Eisner maintains their work is very similar, we shall see it is actually quite different. Major differences between these two scholars exist in the way they define the terms they use, the basis for their art education programs, and in their conclusions, including evaluation and assessment. Gardner's Arts PROPEL is based on cognitive science, while much of Eisner's DBAE theory is based on behaviorism. Gardner has designed a new way of looking at teaching art
and evaluating that teaching and learning. He would like to see all of education adopt the approach he has recommended in Arts PROPEL. On the other hand, Eisner modifies somewhat his ideas about evaluation in education to suit art education, thus making art education more like other academic courses in the curriculum. Chapter five will explore how the art education theories of Gardner and Eisner are working in the classroom plus look at where art education may be headed as we begin the twenty-first century.

Gardner and Eisner have a mutual respect for the other's work. Both make references to the other's work in their own writing. Gardner says of Eisner, "I should explicitly cite the seminal work of Eisner, from which I have gained a great deal over the years" (Gardner, 1994, p. 577). Likewise Eisner reveals his respect for Gardner: "Gardner has made a major contribution to discussions of mind and increasingly to the content and aims of education" (Eisner, 1994b, p. 555).

What is most important, in my view about Gardner's work is that it provides a compelling corrective to the intellectually constipated conception of human ability that has characterized both public schools and, perhaps especially universities. . . . He has provided not only significant leads for researchers to pursue, but extremely important implications for developing a more equitable approach to education. (Eisner, 1994b, p. 559)

Eisner further affirms that he "benefited from the good advice" of Howard Gardner (Eisner, 1993b, p.10). He also acknowledges that his work and Gardner's share common interest. Specifically, Eisner believes his 1982 book, Cognition and Curriculum, shares a common interest with Gardner's 1983 book, Frames of Mind.
According to Eisner, Gardner's interest is in describing the multiple ways in which people can be "smart," while his own work focuses on matters of meaning.

He [Gardner] discusses the ways in which different cultures assign different priorities to different kinds of problem solving. He also explores the developmental history of each type of intelligence. I regard his work as among the most influential that have appeared in the field of education in the last decade. (Eisner, 1993b, p. 6)

Eisner explains that he is concerned with

the different kinds of meaning that different forms of representation make possible. . . . [and] the conditions within curriculum and teaching that foster what might be regarded as multiple forms of literacy.
(Eisner, 1994a, p. 23)

In other words, Gardner's work focuses on the internal workings of the mind, while Eisner's work focuses on external or public expression. Eisner believes experience can never be displayed in the form in which it initially appears. The connection between experience and meaning and the contribution that forms of representation make is at the heart of any useful theory of education (Eisner, 1993b, p. 7).

Science can never have a monopoly of meaning because the form of representation it employs is only one among the several that are available (Eisner, 1986, p. 65).

In looking at another area where Gardner and Eisner agree, Gardner believes there are three reasons why education in the arts became of national interest in the mid-1980s. The first was that nearly all aspects of education were being examined during this time. The second was that the Rockefeller charities were actively involved in supporting arts education research during the 1970s and early 1980s. This includes, of course, Gardner's Project Zero at Harvard, University. "In our more chauvinistic moments, we claim a bit of credit for some of
the recent reorientation in arts education" (Gardner, 1993, p. 141). The third reason for national attention given to art education in the middle 1980s was that a new player entered the field, the J. Paul Getty Trust. The Getty Institute, which before August 1996, was called the Getty Center for Education, has gained considerable national attention and has helped energize the field of art education through its financial assistance. The main thrust of the Getty Institute has been to introduce the basic building blocks of art into America's schools through support of DBAE (Gardner and Grunbaum, p. 9).

As the name intimates, the goal of this effort is to make art education part of the national curriculum movement, and go “beyond creating”; to help ensure that American children learn not only to “mess with paint and clay” but also to be knowledgeable about art history, art criticism, and aesthetics. (Gardner, 1989c, p. 205)

Gardner believes that the Getty Institute is largely responsible for a new emphasis in visual arts curricula at both the state and national levels.

Eisner agrees that the Getty Institute has been important in bringing art education to the front of discussions about education. “The Center had the intelligence and the guts to take on a difficult job with sensitivity and insight, and to my mind, with effect” (Eisner, 1988b, p. 186).

Both Gardner and Eisner acknowledge debts to Bruner and Dewey in the formation of their art education theories. Gardner speaks of a shift in his thinking about education during the early 1980s from a preference for more open-ended modes of inquiry to that of an enthusiastic "progressive" view in education, as a result of his experiences working with curriculum development, teaching in an open
classroom and “reading such educationalists as Dewey and Bruner” (Gardner, 1989c, p. 289). We can recall Dewey’s “progressive” thoughts on art and the way it should be taught. Gardner continues, “My psychological investigations have all stressed the open, exploring, problem-finding nature of knowledge acquisition (Gardner, 1989c, p. 289). He believes his multiple intelligence theory stresses the need for each child to find and develop their talent.

Eisner, too, believes he owes “a great intellectual debt” to John Dewey. His “work has had an extraordinary effect on my thinking” (Eisner, 1982, p. xii). However, unlike Gardner, whose art education theory reflects Dewey’s influence, Eisner’s DBAE shows little of the influence of Dewey. This will be explored in further detail as we compare the definitions of cognitive science expressed by Gardner and Eisner. As previously mentioned, both Gardner and Eisner also acknowledge Bruner’s contribution to education and to the development of their art education theories as well, thereby reemphasizing the grounding of their ideas in cognitive science.

Comparison of Definitions of Cognitive Science

Although Gardner and Eisner describe cognitive science using similar rhetoric, they actually interpret cognitive science in quite different ways. First a look at areas, or definitions, where Gardner and Eisner agree. The first is their description of the developmental stages of learning in the arts. Gardner explains that if one wishes to enhance an individual’s understanding in the arts,

Involve her deeply over a significant period of time with the symbolic realm in question . . . encourage her to interact regularly with
individuals who are somewhat (rather than greatly) more sophisticated than she is, and . . . give her ample opportunity to reflect on her own emerging understanding of the domain. (Gardner, 1990, p. 29)

Gardner believes this developmental course actually resembles that which a *connoisseur* must pass in the course of her training (Gardner, 1990, p. 29).

Eisner also writes about *connoisseurship* when describing the process of learning in the arts. He says, "the connoisseur is someone whose ability to notice the subtleties that count in some domain. . . . A connoisseur is someone who has worked at the business of learning how to see, to hear, to read the image or text" (Eisner, 1991b, p. 174). On the matter of defining a connoisseur, Gardner and Eisner agree.

Gardner's theory of multiple forms of intelligence is extremely important in his definition of cognitive science. It also forms the basis of his art education theory. He believes the arts have no claim on any particular one of the intelligences; rather, both intelligence and creativity can occur in any domain.

It is completely an individual or a cultural decision about the particular ends to which an intelligence is deployed. . . . Just as there are many forms of human intelligence, each focused on a particular content area, so, too, there are many varieties of creativity, each restricted to a particular domain. . . . People are creative, or not creative, in a particular domain, even as they are intelligent, or not intelligent, within a domain. (Gardner, 1989c, p. 112)

It would be appropriate here to recall Gardner's definition of intelligence: "An intelligence involves the ability to solve problems, or to fashion products, which are valued in one or more cultural settings" (Gardner, 1983, p. x).
Eisner appears to agree with Gardner’s theory of multiple intelligences as he explains cognitive pluralism. Eisner emphasizes cognition in physics or biology or mathematics is not identical to cognition in the arts.

What DBAE curriculum underscores is the virtue of cognitive pluralism; it is on that foundation that DBAE is based. . . . One of the most important contributions of DBAE is its effort to expand the generally held view of cognition so that it does greater justice to the ways in which people come to know. (Eisner, 1990, pp. 428-429)

If DBAE is based on cognitive pluralism, it is important that we understand Eisner's view. He could be referring to the method individuals use in learning or he could be referring to the result of learning. Eisner, we can recall, defines cognition as the “process of knowing, the means through which the organism becomes aware of the environment” (Eisner, 1980, p. 330). Eisner says, “Forms of human thought are multiple” (Eisner, 1994a, p. 31). He also recognizes that the realm of meaning is multiple. Science, for example, is different from art because the forms of representation they employ differ (Eisner, 1986, p. 65). It appears that Gardner and Eisner agree that there are multiple ways in which people come to know.

There are, however, many areas where Gardner and Eisner disagree in their definition of terms. For instance, Gardner and Eisner do not think of a creative person in the same way. Gardner believes an individual can be creative and intelligent in one domain and not necessarily creative and intelligent in another domain. Gardner defines a creative person as “one who can regularly solve problems or fashion products or carry out projects in a domain which are initially
considered novel or unusual but ultimately come to be accepted in one or more
cultural settings" (Gardner, 1989c, p. 113).

Eisner also addresses the issue of creativity, although he does not use the
word *creative*. Instead, he discusses what he calls *Boundary Pushing*.

In every culture, objects are embedded in various mental fields. . . .
The fields specify and encourage acceptable, stereotyped, and
restricted behavior on the part of individuals who act within the limits
of the fields. Some individuals, however, are able to extend these
limits. The process of extending or redefining the limits of common
objectives is called Boundary Pushing. In the classroom, Boundary
Pushing is displayed by the child who uses numerals to create designs
or pictures or who uses an inked eraser as a rubber stamp. Thus,
Boundary Pushing is the ability to attain the possible by extending the
given. (Eisner, 1972, p. 217)

Eisner's view is quite different than Gardner's view. Eisner's view of creativity is
similar to the view held by behaviorists. The behaviorist views the creation of the
artist as a product of genetic endowment, personal history and current
circumstances in the environment. In other words, the behaviorist believes the
artist is not an "originating, initiating, creating agent" (Sparzo, p. 226). Rather, she
is someone whose behavioral response differs from other's response to a similar
stimulus. Thus creativity is doing things in a different way, like the child in Eisner's
example just above.

Eisner writes frequently about the importance of the role of the senses in
cognition. He says that our sensory systems bring awareness to the world we
inhabit and function rather like an "information pickup system" (Eisner, 1994a, p.
17). "No concepts can be formed without sensory information" (Eisner, 1985a, p.
203). Concepts, then, take shape from the information that the senses provide.
Eisner also believes our senses are the means through which we gain experience and function as resources through which our experiences can be transformed into symbols.

Perception of the world is the product of a mental activity in which humans construe form, select what is salient or significant, and confer meaning upon it. The sensory systems that humans possess provide options for such contact. (Eisner, 1980, p. 330)

Eisner appears to be talking about a two-step process. First the senses "pick up" information, then concepts are formed. This is a behaviorist approach to perception. According to behaviorists, "sensations come prior to meaning and the two processes, sensing and finding meaning, are regarded as separate" (Bigge and Shermis, p. 61). On the other hand, a cognitive scientist "does not separate a person's sensation of an object from the process of gaining its meaning" (Bigge and Shermis, p. 61).

Eisner's view of experience also invites a closer inspection as it is an important part of his interpretation of cognition. Recall that the DBAE program has been criticized because it offers the student little authentic experience, that is, experience which is relevant to one's own life. Eisner says:

the individual transacts with an environment in which a variety of qualities are present. Out of this transaction depending upon the individual's attitudes, purposes, and prior learning, aspects of that environment are construed and concepts formed. These concepts are formed out of the experience that the sensory system makes possible. . . . The kind of experience an individual has depends upon the kinds of qualities the sensory system picks up. (Eisner, 1994a, pp. 46-47)

In other words, Eisner believes experience is the result of a transaction which is dependent upon the senses, and is affected by prior learning. Eisner continues to
explain that it is through behavior made possible by experience that an “editing process” takes place which allows revision, correction and strengthening of ideas (Eisner, 1994a, p. 47). If we examine how the behaviorists define experience, we see a remarkable resemblance to Eisner’s description. When behaviorists use the term “experience,” it is used mechanistically. “It means the conditioning process by which a human organism either learns new responses or changes old ones as the result of stimuli impinging on its sensory organs” (Bigge and Shermis, p. 63). It appears that Eisner, while using the language of a cognitive scientist, views experience as a behaviorist.

On the other hand, Gardner follows the cognitive science view of experience. Cognitive scientists give experience a major role in their learning theories.

They regard experience as being rooted in insightful behavior. From this point of view, experience is a psychological event that involves a person acting purposefully with anticipation of the probable or possible consequences of such action. Thus, experience is interaction of a person and the person’s perceived environment (Bigge and Shermis, p. 185).

Dewey explains experience in a similar way. “An experience is always what it is because of a transaction taking place between an individual and what, at the time, constitutes his environment (Dewey, 1938, p. 41). In other words, an experience has to do with someone’s own life.

These very different understandings of experience are reflected in the differences between Gardner’s Arts PROPEL and Eisner’s DBAE. In Arts PROPEL, production activities are central. Production is the basis for all other learning in the arts. On the other hand, by offering little production time, DBAE is offering little
chance for students to have their own experiences. In DBAE, instruction in art
history, criticism and aesthetics is not necessarily based on or linked to the
student's own production experience.

An examination of the theories supporting the art programs designed by
Gardner and Eisner reveal several other fundamental differences. First is the
important issue of the structure of the curriculum. Gardner believes that Arts
PROPEL curricula need to be rooted in the spiral aspect of artistic learning and that
no value lies in planning a sequential curriculum in art education (Gardner, 1989b,
p. 174). Gardner approvingly quotes John Dewey (1934) on the subject of learning
in the arts. Dewey explains that "artistic forms of knowledge and expression are
less sequential, more holistic and organic, than other forms of knowing" (Dewey,
quoted in Gardner, 1990, p. 54).

Spiral learning is a concept that originated in the progressive educational
theories of Dewey and later was popularized by the cognitive scientist Jerome
Bruner. Dewey suggests:

It is part of the educator's responsibility to see equally to two things:
First, that the problem grows out of the conditions of the experience
being had in the present, and that it is within the range of the capacity
of students; and, secondly, that it is such that it arouses in the learner
an active quest for information and for production of new ideas. The
new facts and new ideas thus obtained become the ground for further
experiences in which new problems are presented. The process is a
continuous spiral. (Dewey, 1938, p. 79)

Bruner presents the cognitive view of curricula:

The road, then, to a teacher's successful structuring of a subject
matter is the development of a spiral curriculum. Such a curriculum
begins with rudiments that children already have learned and builds
upon them by adding more complex and subtle categories and codes; teaching, as it moves upward, constantly circles back to build upon previous understandings. (Bigge and Shermis, p. 140)

In the spiral curriculum, topics are developed and then redeveloped in later grades. A teacher is expected to teach readiness rather than wait for it to develop. Bruner believes there are certain strategies that will increase the likelihood both that the knowledge gained will be "converted into economical conceptual structures and that the learner will recognize the transferability of the learned material to new similar situations" (Briggs and Shermis, p. 140). Being able to convert learning into structures that will transfer to new situations is, indeed, a very desirable educational goal.

Gardner explains his view of the spiral curriculum. Artistic learning should be organized around meaningful projects which are carried out over a significant period of time to allow ample opportunity for feedback and discussion and for student reflection. Artistry involves a continuing exposure, at various developmental levels, to certain core concepts, like style, composition, or genre. He believes that curriculum may be sequential in that concepts and problems may be revisited in an increasingly sophisticated way, but not sequenced in the sense that there is one set of problems for one grade and another set for another grade (Gardner, 1989c, p. 174).

On the other hand, Eisner maintains that sequence is a necessity in any art program. "Programmes that have no sequential development are programmes that are educationally static" (Eisner, 1988b, p. 192). DBAE curriculum is sequenced
within and between grades. Eisner elaborates that, in a psychological sense, sequence within and between grade levels pertains to the organization of activities so that they build upon ideas and skills students have already acquired. Students need to make connections between previous learning and what they are dealing with currently. This theory of learning first came from the nineteenth century philosopher Herbart's views on apperception, later from behaviorists like Thorndike, Watson, and Skinner, and more recently from mastery learning as developed by Benjamin Bloom. Apperception is the process of new ideas associating themselves with old ideas.

Apperceptionists would teach students to read by starting with the alphabet and making sure that the students could recognize and say each letter. They then would tell the students how letters are put together to make words, how letters make sounds, how sounds are telescoped together, how vowels and consonants work. . . . Next, they would talk to them about things that they already knew, such as dogs [and] cats. . . . Then they would show them d o g and explain that it stands for dog. (Bigge and Shermis, p. 10)

Apperception was an immediate forerunner of twentieth-century behaviorism (Bigge and Shermis, p. 43). Out of behaviorism, Benjamin Bloom developed a contemporary version of mastery learning and teaching (Bigge and Shermis, p. 266). Bloom prescribes a curriculum of building blocks with a sequential structure. When Bloom's theoretical views were published in his *Taxonomy of Educational Objectives* in 1956, the psychology of learning and thinking was dominated by behaviorism (NSSE, 1994, p. 41). Bloom says:

We can view the educational process as one of building on simpler behaviors. . . . Classes shall be arranged from simple to complex. . . . As we have defined them, the objectives in one class are likely to
make use of and be built on the behaviors of the preceding classes. (Bloom, 1956, pp. 16-18)

The structure of learning from Bloom’s model “resembles a hierarchy, and the learning that makes possible the attainment of the objectives is cumulative-like” (NSSE, 1994, p. 47).

Eisner believes the sequential curriculum is important because of automaticity. According to Eisner, automaticity pertains to the internalization of learning so that a student may call on skills or ideas without conscious effort. Development of automaticity in the cognitive repertoire depends on sequential programming. Correctly designed curricula build upon what students have learned and prepare them for what is to come (Eisner, 1988b, pp. 192-193). Eisner speaks about the sequenced structure:

no door can be opened without a curriculum having both structure and magic. Without structure in our curriculum, we get no automaticity. With no automaticity, we get no internalisation. With no internalisation, we get no magic. . . . Without [magic] there is no art. Without structure there is no access. (Eisner, 1988b, p. 195)

Eisner explains the internalization of experience in this manner:

internalisation is more likely if the curriculum activities give students ample opportunities to practise ideas and skills. For example, if students are asked to describe metaphorically the expressive qualities of a work of art, say a particular piece of architecture, they can be asked to do the same for sculpture, painting, graphics, ceramics, and eventually, for the streets on which they live, the ads they see in magazines, and the people they know. (Eisner, 1988b, p. 193)

Eisner is not very clear in describing the internalization of experience. In the above description, he sounds as if he is describing the transferability of learned material to new situations. If so, he disagrees not only with Gardner but also with Dewey and
Bruner because the latter all believe transferability occurs most readily in the spiral curriculum. Eisner uses the language of cognitive science to explain the learning process which is the basis of his theory of art education, the sequential curriculum. However, the sequential curriculum is grounded in behaviorism.

**Comparison of Applications of Cognitive Science**

Since Gardner and Eisner interpret cognitive science in such different ways, the art education programs they design will also be quite different. Arts PROPEL focuses on the development of artistic skills, with perceptual and reflective elements growing out of students' active involvement with artistic media rather than their acquisition of information. It is based on a student-centered, rather than an adult-centered, curriculum (Zessoules, Wolf and Gardner, p. 119). On the other hand, DBAE focuses on developing balanced curricula derived from four separate disciplines and provides only limited active involvement of the students with artistic media. These differences will be discussed in greater detail as the programs themselves are examined. Arts PROPEL has domain projects for all of the arts; however, as DBAE is designed for only the visual arts, only the visual arts from Arts PROPEL will be examined for comparative purposes. First an exploration of Arts PROPEL.

Gardner explains that because DBAE "seemed a bit off the mark," he and his colleagues at Project Zero began the Arts PROPEL project.

In contrast to some proponents of the Getty position, our philosophy of arts education posits that artistic production must be central, particularly for young children. And unlike the Getty approach, we deliberately work across several art forms. We want students to have
Arts PROPEL seeks to build on the strengths of earlier approaches to art education rather than just rejecting them completely. When Gardner writes about earlier approaches to art education, he refers to the creative self-expressive method which has been the accepted method of art instruction in the public schools for many years.

In Arts PROPEL, production is central to the curriculum design. To Gardner, the arts are serious cognitive activities.

Rather than simply making use of the forms of thought which are appropriate for most scholastic endeavors, the varieties of thinking involved in the arts are different and require their own peculiar training regimens and forms of expression. (Zessoules, Wolf and Gardner, p. 122)

Visual artists must learn to deal with the properties of space, color, form, and texture permitted by two- or three-dimensional plastic media. Art education must begin with training in these artistic forms. “Then, based upon this artistic literacy, arts students can proceed to engage in critical, analytic, or historical studies” (Zessoules, Wolf, and Gardner, p. 122). Arts PROPEL is based on three aspects of artistry: production (the making of art), perception (discriminations about art objects), and reflection (introspection and critical analysis about production and perception activities). “To choose between or even to separate the process of creating art from the process of looking and thinking about art is to bypass the fundamental nature of artistic experience” (Zessoules, Wolf and Gardner, p. 123).
Gardner believes it is important to be able to make discriminations and reflect upon artistic activity, but these skills should come directly from one's productive activities. It is in the process of working with artistic media that the artist develops skills of perception and skills of reflection (Gardner and Grunbaum, p. 27). Rather than separating art history from production as DBAE would suggest, Arts PROPEL introduces history that is relevant to the art production in which the student is engaged. For example, a student learns about medieval triptychs only after that student attempts a tripartite work of her own.

The theory of multiple intelligences provides the conceptual support for Arts PROPEL. Within the theory of multiple intelligences, the intelligences are mobilized for solving problems. Gardner believes that analysis of problem-solving requires consideration of both the cognitive functioning of intelligences and the context of a domain (Walters and Gardner, p. 5). Each intelligence is structured independently but they function in connection with one another. This has implications for learning. Gardner believes there is no single form of artistic thinking; rather, each mode, or intelligence, can have its own artistic thinking. Gardner believes discipline-based approaches have neglected an area of arts education which he sees as important. He refers to this area as “artistic thinking.” (Gardner and Grunbaum, p. 10).

Differences across art forms—from dance to poetry from classical music to painting—are sufficiently great as to render superficial and unhelpful generalizations about the nature of forms of thinking across these fields. “Artistic thinkings” perhaps—but no single form of artistic thought. (Gardner and Grunbaum, p. 11)
Individuals have the potential to develop competencies in each of the intelligences. "Individuals will differ in their particular profile of cognitive modes: nonetheless, the achievement of at least some competence or "literacy" in each form of thinking seems a reasonable goal" (Gardner and Grunbaum, p. 10-11).

Just as a domain may require more than one intelligence, so, too, an intelligence can be deployed in many domains (Gardner, 1993, p. 37). Gardner believes that "it becomes incumbent upon a system bent on assessment to devise means of determining whether students are in fact mastering aesthetic forms of thinking within these symbol systems" (Gardner and Grunbaum, p. 12). Gardner explains intelligence is a "biopsychological potential" and domain is "the discipline or craft that is practiced in a society" (Gardner and Grunbaum, p. 12).

In Arts PROPEL, domain projects are open-ended sets of exercises or activities, sometimes referred to as curriculum modules, that are presented over the course of a year and lead toward products. Products in the arts could be, for instance, songs, drawings, or poems. The products then can be evaluated by the teacher and the student together (Walters and Gardner, p. 5). Gardner says it is their aim to create an ensemble of domain projects for each art form encompassing most of the important concepts in that art form (Gardner, 1989a, p. 80). "We hope as well that we can develop a general theory of domain projects: what set of exercises qualifies as a domain project, what kinds of learning one can expect to take place, how best the student can be assessed within and across domain
projects" (Gardner, 1989a, p. 80). In Arts PROPEL, domain projects, then, serve as both exercises, or curriculum modules, and assessment vehicles.

Domain projects can be introduced into the regular curriculum individually and require only a few sessions to complete. They are not a curriculum in themselves but are designed to work within an existing curriculum. An example of a domain project in visual arts is the "composition" domain project. It is designed to help students notice how arrangements and interrelationships of shapes affect the composition and the impact of artistic works. Students make compositional decisions and reflect on the effects of their decisions in works created by acknowledged artistic masters. In the first session of this project, students are given ten oddly shaped black geometric pieces and are asked to drop the shapes onto white paper. The second exercise is for the students to make a pleasing composition with the same shapes. They are asked to reflect on the differences between the random and the deliberate work. They record the differences they see and state the reasons that motivated their choices.

During the second session, students are introduced informally to certain principles of composition with the instructor introducing a number of artistic works of different styles and periods that differ significantly from one another in the kinds of symmetry or balance. Students are asked to describe differences and convey them to others. Harmony, cohesion, repetition, dominant forces, radial patterns, surprise, or tension are all noted. At the end of the session, students are asked to jot down in a notebook similarities and differences from a set of contrasting slides they have
viewed. They are also asked that they should, during the next week, search their daily environment for different compositions.

In the third session, students report on the compositions they have observed and discuss them with reference to those observed in art class. Students then return to the deliberate composition of session one. Now they are asked not only to make a final work but also to indicate their plans for this work. On a work sheet they indicate what they found most surprising about their composition and what further changes they might want to make in a future work. In addition to the student’s own compositions, perceptual discriminations, and reflections, the teacher also has his or her own assessment sheet. The teacher can evaluate the student in terms of the kinds of compositions attempted or completed. Other kinds of learning, such as the student’s success in discovering compositions in his environment or his ability to connect his own compositions with those of well-know artists, can also be assessed (Gardner 1993, p. 147-148).

Another domain project in visual arts is called, “The biography of a work.” The goal is to help students synthesize their learning from previous domain projects in composition, style, and expression and to do so through tracing the development of a complete work (Gardner, 1989a, p. 80). Students are asked to draw their room at home in a way that expresses something about themselves. They can use a range of media. In the first session students choose any element of their room and to add whatever props or objects that might be revealing about themselves. They are asked to use these in preparation of preliminary sketches. Their focus should
be on composition, but they are encouraged to think about how a range of artistic elements can express themselves and not just what is represented in the picture.

In the second session, students examine slides that show how artists have used objects metaphorically in their work and how objects or elements can carry a multiplicity of meanings. They also view slides of artists' studios or rooms and are asked how these rooms might bring out something about the artists' view of their particular world. Students return to their own preliminary sketches and make provisional decisions about the media they wish to use and the style, color, line, texture, etc., they plan to employ. Students fill out worksheets in which they are asked to reflect on the choices they have made, the reasons for them, and their aesthetic consequences.

In the third session, students review all preliminary sketches and trial sheets, think about whether they are satisfied with them, and begin their final work. They discuss their works-in-progress with other students and in a final session during the following week, students complete their works, critique each other's efforts, and review their sketches, trial sheets, and reflections. The activities in this final week serve as a model for the kinds of reflections used in the student portfolio compilations (Gardner, 1989a, p. 80).

Now for a detailed examination at DBAE curriculum, which will be followed by a comparison of the two programs. DBAE is comprised of the four disciplines of art criticism, art history, aesthetics, and art making. Eisner explains that there are four aims central to the mission of DBAE and they are representative of the four major
things that people do with art. "They make it. They look at it. They understand its place in culture over time. They make judgments about its quality" (Eisner 1988b, p. 189). Those professionals involved with the four aspects of the visual arts are artists, art critics, art historians, and aestheticians. These four aspects constitute the four disciplines of DBAE.

The goal of DBAE is for children to develop the visual sensitivity to see and describe subtle and complex qualities of both visual art and the visual environment in which they live. Children should be able to understand the relationship of art to culture and should learn how to participate in the perennial dialogue regarding the nature of art (Eisner, 1987b, p. 16). Eisner explains that these abilities and "forms of understanding not only illuminate what artists have made, they are also critical for experiencing the visual world at large" (Eisner, 1987b, p. 16). DBAE is aimed at developing these skills, understandings and attitudes.

Because Eisner sits on the board of the Getty Institute, it is relevant to examine the materials the Institute distributes as a sample curriculum in DBAE for comparison purposes. Because Arts PROPEL is designed for middle and high schools, only middle and high school materials from DBAE sample curriculum will be used in this comparison.

One "unit" in this curriculum sampler, designed for high school classes, consists of seven or more 45-minute periods on twentieth-century art and is titled "Letters, Words, and Symbols in Art." The introduction tells us the students will have lessons in art history, art criticism and aesthetics. In addition, over this period,
the students will "create paintings or collages that incorporate the actual or simulated printed word (letters, symbols, or numerals), applying knowledge of design elements and principles along with expressive qualities found in letters" (Alexander and Day, p. E-4). There are specific objectives in art history, art criticism, art production and aesthetics. The objectives for art history are:

Students will learn about the work and lives of several artists in the twentieth century who incorporated letters or printed words into their work. Students will study methods the cubists, dadaists, pop artists, and other contemporary artists have used to communicate ideas. (Alexander and Day, p. E-4)

Objectives for art criticism are:

Students will study the formal qualities of mechanical, measured, hard-edged (as opposed to soft-edged) letters and compare handcrafted letters with mechanical type. They will analyze ways that elements and principles of art are applied to designing alphabets. The students will recognize and compare the styles of several artists who incorporate letter and word forms in their work. Students will examine overlapping boundaries of graphic design and fine art. (Alexander and Day, p. E-4)

Objectives for art production:

Students will create paintings or collages that incorporate the actual or simulated printed word (letters, symbols, or numbers), applying knowledge of design elements and principles along with expressive qualities found in letters. (Alexander and Day, p. E-4)

Finally, objectives for aesthetics:

Students will speculate on the effectiveness of the expressive qualities resulting from the use of letters and words in works of art. Students will investigate aesthetic meanings conveyed by letters and words in artwork beyond the literal meanings common in written language. (Alexander and Day, p. E-4)
For the first session instructional methods are explicit. Under a heading saying “Instructional methods and activities” is a list of instructions for the teacher.

**The teacher will:**

1. Introduce some of the artists listed, such as Gris, Davis, Lichtenstein, and Worhol.
   
   Place reproductions of their work around the room.

2. Using an opaque projector, show examples from publications of the use of words, symbols, and letters in popular culture citing uses of words, numerals, letters, and symbols on billboards, posters, greeting cards, advertisements, and on packages.

   Show examples from type catalogues used by graphic designers.

   Ask students to identify and discuss the expressive qualities of mechanical and hard-edge symbols, logos, letters, and words using some of these examples.

   Ask students how letters and words found on designer labels, articles of clothing, corporate logos, advertisements, and in the mass media (TV, newspapers, etc.) communicate feelings, values, and meanings.

3. Show examples of the development of mechanical, prescribed letter forms and alphabets from pictograms through copperplate script, including gothic letters designed by Durer.

4. Guide students in discussion of the reasons for their slang phrases and current expressions.

   Ask if they have thought about the visual images for some of these phrases.

   List some of them on the board and in student journals. (Examples: bad, fresh, dude, chill; discuss why these words change with each new generation of students).

   Ask students to continue to list more expressions on their own as optional homework.
5. Ask students to keep a journal, listing reactions to slides and other reproductions, building a glossary, and entering homework assignments.

Explain the use of a daily journal and regular entries, including homework assignments.

Discuss journal content with students individually from time to time to gain a sense of their progress and interests.

6. Ask students to look in magazines for examples of words, letters and numerals, in different styles, for analysis and identification. These will be used later in the unit. They might wish to paste some of their favorite examples in their journals and make entries that explain their selections (Alexander and Day, pp. E-5-7).

There are no production activities during the first session of this unit, nor during the second session. During the second session the students will view slides and discuss cubism, dada, and pop art. A slide show quiz is also given during the second session, asking students to write answers to questions based on observations for example, What style is this like? Also at this session student journals or learning logs are checked. In the third session, students do participate in some production activities with the preparation of several thumbnail sketches and a preliminary drawing incorporating printed letters. Rather than the students being actively involved in production from the first day, it is not until the third session that students have any production activities. The emphasis appears to be on linguistic intelligence. The students are expected to do a great deal of writing. The evaluation for this unit will be discussed later.

In a unit designed for middle school or junior high school, titled “Celebration,” classes are to meet three to five times per week for 40-minute-to-1-hour sessions for 18 weeks. The objectives are written as follows
The student will:

1. Appreciate how varied forms of art express common themes and ideas across cultures. (Art History)

2. Compare and contrast similarities and differences in the forms of celebratory art of various cultures. (AH, Art Criticism)

3. Choose works for an exhibit and defend choices. (AC, Aesthetics).

(Alexander and Day, p. D-4)

During the first session, after discussion, students can select and hang an exhibition, not of their own work, but of reproductions to convey the idea of celebration. One full period will be devoted to discussing slides that relate to the celebration theme. During the third session, students are to produce a collage, but as we examine the rest of this session we see how little time will be spent on production activities. The students are also asked in this session to write a brief paragraph discussing symbols and meanings in their choice of van Eyck's *Arnolfini Wedding* or Bruegel's *Peasant Wedding*. Assessment is made of the student's ability to interpret meaning and decipher symbols as discussed in class. After displaying the students' collages, an assessment will be made of them followed by a class discussion of the van Eyck and Bruegel paintings and/or other art works used with this lesson. It is apparent that this DBAE curriculum places a high priority on linguistic intelligence and a very low priority on art production. This curriculum follows Eisner's view of structure as well as his view of objectives.

The DBAE curriculum differs greatly from that of Arts PROPEL. The Arts PROPEL projects are each based on art production but contain elements of art history, art criticism and aesthetics. During each session of a domain project,
students are involved with the production of art. Artistic leaning is based on a student’s ability to express herself directly within the medium of an art form, which can call upon numerous intelligences. At Arts PROPEL this self-expressive ability is seen as dependent upon active involvement in an art form. Students are given extensive experience in working within art media. "In the PROPEL approach, students must themselves behave as artists in order to engage in the process of artistic thinking" (Zessoules, Wolf and Gardner, p. 119). In Arts PROPEL, the learning is open-ended.

On the other hand, DBAE is based on art history, art criticism, and aesthetics, with only a small portion of time devoted to art production. In only one of the first three sessions of “Letters, Words, and Symbols in Art” are students given the opportunity to produce art. DBAE curriculum is restricted by numerous objectives which rely heavily on linguistic and logical skills. Instructional objectives change the view of knowledge. With learning outcomes prescribed prior to teaching, knowledge becomes something already known by the teacher rather than something that can be the result of the student’s own intellectual activity (Efland, 1990, p. 262).

The Getty Institute uses the phrase “Beyond Creating” as an introduction to its DBAE curricula. Gardner believes:

One cannot use a phrase like “Beyond Creating” without suggesting that creating itself is relatively unimportant if not superfluous; and one cannot use the word “discipline” and invoke the names “history,” “criticism,” and “aesthetics” without suggesting that most of children’s time in art classes ought to be devoted to talking and making logical distinctions. Even if this is not what GCEA [the Getty Institute] “really
wants," it is the message conveyed by the symbolic coin which is customarily invoked by advocates of DBAE. (Zessoules, Wolf and Gardner, p. 120)

While artistic production activities may not be enough by themselves, clearly, bypassing them endangers the integrated core of artistry. Nevertheless, DBAE removes students from close contact based on the experience of making art (Zessoules, Wolf and Gardner, p. 120).

Comparison of Assessment and Evaluation

As we examine evaluation and assessment in Arts PROPEL and DBAE, many other differences arise. Gardner believes each intelligence is structured independently but functions in connection with others, and this has implications for assessment. According to Gardner, an assessment must pose problems which require individuals to work with the materials of a particular domain; and it is important while assessing to pose a number of problems with multiple solutions in order that the talents and skills of an individual be revealed. In other words, a true performance must be examined, not just the verbalization of the proper single solution to a problem. In order to make a complete assessment, demands on all the intelligences must be made.

Much of the writing of Gardner and Eisner focuses on evaluation and assessment and reflects many of their conclusions about cognitive science and art education. In Arts PROPEL, three kinds of competencies are assessed. They are production, perception, and reflection. Production is the making of art, perception is effecting distinctions or discriminations within an art form (thinking artistically), and
reflection is stepping back from one's own or other artists' perceptions or productions and seeking to understand the goals, methods, difficulties, and effects achieved (Gardner, 1989a, p. 82). "There is no point in assessing competencies or even potentials unless the student has had some significant experience in working directly with relevant artistic media" (Gardner, 1989a, p. 82). With that goal in mind, curriculum modules were devised and linked to assessment instruments. In the visual arts, the competencies include sensitivity to style, appreciation of various compositional patterns, and the ability to create a work which satisfies certain constraints. For each of the competencies, a set of exercises, called domain projects, is generated (Gardner, 1989a, p. 82). Each domain project features productive, perceptual, and reflective elements.

Assessment is by both the student and the teacher and occurs as an integral part of the domain project, requiring that the student "think well" in the particular artistic symbol system. The student does not need to be proficient in linguistic or logical-mathematical intelligence. Portfolios are also part of assessment in Arts PROPEL (Gardner sometimes refers to them as processfolios).

Most artists' portfolios contain only the very best works by an artist, the set by which the artist would wish to be judged in a competition. In contrast, our portfolios are much more like works in progress. (Gardner, 1989a, p. 80)

Assessment of domain projects is by no means simple, but Gardner believes the assessments in Arts PROPEL are similar to other kinds of assessments routinely carried out by educators and psychologists. "When it comes to the assessment of portfolios—and particularly ones which focus on the processes of
learning rather than on the quality of the final products—we are invading unknown territory in the schools" (Gardner, 1989a, p. 81). Gardner explains they have isolated some areas which they are beginning to examine systematically. That includes: individual features of the student's output; his or her ability to conceptualize and carry out a project; the inclusion of historical and critical materials which are related to, or which help to explicate, the student's own work; the regularity, relevance, and precision of portfolio entries; the capacity to think directly in an artistic medium; signs of development and linkage from one work, or set of works, to another; the student's sensitivity to his or her development; the ability to express personal meanings and give them some kind of universal form (Gardner, 1989a, p. 81).

Gardner believes an important aspect of artistic learning is the "opportunity to be involved in meaningful projects, in which one's own understanding and growth can come to the fore" (Gardner, 1989a, p. 81). Gardner explains that both teachers and students find the portfolio activities engaging, exciting, and useful in their own right. "Their classrooms come alive. By encouraging the development of portfolios, and by looking at them sympathetically and systematically, we may be able to increase the use of these materials and activities in schools" (Gardner, 1989a, p. 81). Gardner explains,

as opposed to the regular "jack-in-the-box" assessments that tend to come at the end of an assignment or semester, portfolios illustrate the process behind the genesis of a work. The ability to go back and look over a series of works (potentially over a year's worth or more of selections) enhances students' understanding of their own ideas, progress, and difficulties. (Zessoules, Wolf and Gardner, p. 127)
The portfolio approach to evaluation enhances a teacher’s insight into individual student’s characteristic artistic process. Gardner refers to the student portfolio as a *cognitive map* of the latter’s involvement in projects. It contains the drafts or beginning aims of a project, various sketches, notes and first reactions to these efforts, collections of products by others, interim drafts and a final version of the project with critical reactions and suggestions for future work. The portfolio may be supplemented with a written journal wherein the student may reflect on the creation of pieces. It also will reveal the student’s ability to "take risks, develop ideas, and build on past knowledge" (Zessoules, Wolf and Gardner, p. 127). The student’s participation in his own artistic development will be educational. Rather than measuring what a student learns in a particular unit, this type of assessment demonstrates learning over a period of time (Gardner, 1989c, pp. 205-208).

Now we will examine assessment and evaluation in DBAE for similarities and contrasts with Arts PROPEL. A publication from Getty (1992), *The DBAE Handbook: An Overview of Discipline-Based Art Education*, discusses evaluation. According to this handbook, hampering the assessment of student achievement in the arts is the fact that art educators have been reluctant in the past to use standardized testing methods to quantify student behavior in art. The portfolio approach does not suit DBAE, for how does an instructor evaluate student understanding and appreciation of art? Products are needed that provide written materials that address ideas and information from the historical, critical, and aesthetic disciplines.
Although the traditional portfolio was often limited to students' own artworks, the current approach of a program like ARTS PROPEL includes essays, diaries, and research projects that make the portfolio as assessment resource not only for art but for writing, evaluation of teaching, and other purposes. (Dobbs, p. 48)

It is the lack of widely published or widely used techniques or instruments for evaluation in art and the lack of tradition of teaching or assessment of disciplines of art history, art criticism, and aesthetics that handicaps evaluation in DBAE.

"Evaluation in DBAE is also constrained by the lack of data and baselines for considering students' achievement" (Dobbs, p. 48).

Now for a look at the evaluations which appear in the Discipline-Based Art Education Curriculum Sampler from the Getty Institute. The first evaluation for the high school class in "Letters, Words, and Symbols in Art" is in the form of a slide quiz. Specifically, the teacher shows "several slides of artworks similar to ones shown earlier and asks students to write brief answers to questions based on previous observations, for example, What style is this like? What kind of typeface is used?" (Alexander and Day, p. E-10). During the last session, students show and critique their works, write an evaluation of their final products, explain how their final product synthesizes their learning experiences from the unit, and participate in the discussion of works by other students, justifying their comments with specific reasons (Alexander and Day, p. E-14). The expectations and evaluations are prescribed ahead of time and are fairly rigid. This Sampler's approach is very similar to Eisner's suggestions for evaluations in the arts.
Let us look directly at Eisner’s view of objectives as a part of curriculum design. Eisner writes about American educators in the 1960s becoming infatuated with *behavioral objectives*.

Everyone was to have them. The idea then, like the notion of standards today, was to define our educational goals operationally in terms that were sufficiently specific to determine without ambiguity whether or not the student had achieved them. (Eisner, 1995, p. 759)

Eisner does not disapprove of objectives per se; rather, the problem he sees with behavioral objectives is that they required construction of hundreds of specific objectives. Eisner believes specific objectives are counterproductive (Eisner, 1995, p. 759).

Eisner has written repeatedly about his own ideas about evaluation in the arts many times between the 1970s and 1990s. According to Eisner, the rationale for the use of instructional objectives in curriculum planning and evaluation is straightforward: "one must know what it is that a student is able to do in order to determine the effectiveness of curriculum" (Eisner, 1985a, p. 77) Eisner explains that this idea was exemplified in the cognitive domain by Benjamin Bloom in the middle fifties (Eisner, 1985a, p. 77). Eisner believes, then, that his suggestions for evaluation through the use of instructional objectives are within the *cognitive domain*.

As noted in Chapter Three, Eisner proposes three types of objectives for evaluation purposes; instructional objectives, expressive objectives, and Type III objectives. Recall Eisner’s definition of the these objectives. The instructional objective is not open to alternative responses, the Type III objective is a problem for
which more than one solution is acceptable, and the expressive objective is to complement other behavioral objectives in order to provide balance to a narrow view of education. Eisner explains the expressive objective as an "outcome of an activity planned by the teacher or the student which is designed not to lead the student to a particular goal or form of behavior but, rather, to forms of thinking-feeling-acting that are of his own making" (Eisner, 1985a, p. 77). According to Eisner, it is a curriculum activity that is evocative rather than prescriptive and is intended to yield outcomes which are not prescribed or defined before hand.

The task of the teacher is to look back, as it were, to evaluate what happened to the student rather than to ask whether the student achieved '90 percent mastery of a set of items placed before him during a forty-minute period.' The expressive activity is one in which the creative . . . use of skills gained in instructional activities can be employed, developed, and refined. The expressive objective is the outcome of such activities. (Eisner, 1985a, p. 77)

Gardner and Eisner reveal wide differences between their views of evaluation. Gardner's methods of evaluation and assessment are based on an examination of portfolios. The portfolio contents are not prescribed and not known before instruction takes place. The portfolio becomes a record of a student's discoveries in a problem solving venture. Gardner offers new ways to look at assessment and believes all of education should follow the Arts PROPEL model.

On the other hand, Eisner's methods of evaluation and assessment are based on objectives written prior to instruction. With the use of objectives, educational success is defined by how much of the teacher's knowledge is passed on to the student, not by the insights, inventions, or discoveries of the student
(Efland, 1990, p. 262). Even though Eisner uses the language associated with cognitive psychology, his ideas about evaluation are rooted in behaviorism. Eisner offers only a somewhat altered view of his educational evaluation ideas for education in general to be used for art education, thus making art education more like other academic courses.

Eisner expresses the idea that wider uses of diverse forms in teaching will call for more diverse forms of assessment. The results of diverse forms of teaching in the arts will be diverse products. However, Eisner sees difficulties in using diverse forms of assessment to evaluate these diverse products. He believes that unlike teaching with prespecified goals where student tasks are uniform, comparisons between student performances who use diverse forms to display what they have learned will be difficult. "I can see complexities emerging as I now see them emerging in the use of portfolios and other forms of authentic assessment" (Eisner, 1993b, p. 9).

Reforming Schools

Other conclusions reached by Gardner and Eisner are reflected in their writing about national standards and reform in the schools. Both Gardner and Eisner express their displeasure with the idea of a national curriculum and national standards. The argument for uniform schools focuses on a basic set of competencies and a core body of knowledge which everyone could master, plus provision for the gifted to move to the top. There should be the same curriculum for all students, the same methods of teaching, and the same standardized methods of
assessment. Efficiency would be the guide for judging success. Gardner believes that "many of the cures suggested by the neoconservative reformers are worse than the disease; and that in any case the proposed cures will not heal the patients" (Gardner, 1993, p. 69). According to Gardner, those wanting a uniform curriculum have a fundamentally flawed view of human cognition. He calls this view "IQ-style thinking" (Gardner, 1993, p. 69). He notes that there are now hundreds of paper-and-pencil standardized tests used for a variety of purposes. He also believes we have come "let the testing tail wag the curricular dog" (Gardner, 1993, p. 70).

From a number of disciplines interested in human cognition has come strong evidence that the mind is a multifaceted, multicomponent instrument, which cannot in any legitimate way be captured in a single paper and pencil-style instrument. As this point of view gains plausibility, the need to rethink educational goals and methods becomes profound. (Gardner, 1993, p. 70)

Gardner explains that it was only a generation ago which psychologists believed that general laws of learning, perception, memory and attention are applicable across diverse content. The college sophomore, the Norwegian rat, and other species in between were thought to have the same learning functions.

Behaviorist psychologists believed as well that the human mind could be adapted to deal with any kind of information in an equally skilled way. But every year further evidence accumulates as to the deep constraints in the human mind. (Gardner, 1993, p. 70-71)

Gardner believes basic cognitive processes at work in one area are quite distinct from those at work in other areas.

Eisner also raises some important points in his disagreement with the idea of national curriculum and standards.
Why do we think that all students should be measured by the same yard stick or that we will be able to calibrate the results of different tests in order to make them comparable? Why do we believe that we can embarrass teachers and school administrators into higher level of professional performance by imposing a single set of predetermined educational standards on their students. (Eisner, 1992b, p. 722)

Eisner continues that "when you feel that things are falling apart, you tighten up," which is the reason why the public wants standardization (Eisner, 1992b, p. 723). With common goals, common standards, common curriculum, and common assessment, students can be compared between schools and states. State control of schools and plurality of cultures have been celebrated in this country. Eisner believes cultivating individual talents should be a goal for our schools. Adopting common standards for our schools is a failure to recognize differences among students. Despite these statements, however, Eisner presents another interesting conflict to his readers. On one hand he is against a national curriculum and uniform goals; on the other hand, he is on the board of the Getty Institute whose goal is to place DBAE in every school in the country. The design of DBAE actually reflects a set of informal standards because it is intended to be implemented on district-wide bases.

Eisner makes the point that while standards make possible the description of quantitative relationships, there are qualitative standards as well. For a qualitative measure, "the task for both judge and performer is one of matching a performance with a model" (Eisner, 1995, p. 762). With the quantitative standard, the prespecified correct response serves as a standard for each item. The qualitative standard would invite the student to create outcomes that are not identical with
those of their peers. "Children develop at their own distinctive pace. . . . Variability, not uniformity, is the hallmark of the human condition" (Eisner, 1995, p. 763-764). Eisner also believes the socioeconomic level of students and the resources available to them also makes a difference.

According to Eisner, standardization is an attempt for a fast fix. Eisner believes standardization would have a debilitating effect on the schools. It conveys a message that to compare and to measure and to rank is what education is all about. Eisner believes education is about inquiry and deliberation and about becoming critically minded and intellectually curious, and about learning how to pursue your own educational aims (Eisner, 1992b, p. 723). “I do not value schools that regard children as an army marching toward fixed and uniform goals” (Eisner, 1993b, p.23).

Both Gardner and Eisner have written extensively about reform in the schools besides standards, but each deals with it in a different way. Gardner believes that American education is at a turning point. He sees a struggle taking place between those who want a uniform curriculum and those who believe individual-centered schooling is the right direction. Rather than a standardized curriculum, Gardner suggests individual-centered education. He believes the individual-centered school should be the direction for education (Gardner, 1993, p. 68-69). Education ought to be responsive to the differences in intelligences and learning.

Instead of ignoring them [individual differences] and pretending that all individuals have (or ought to have) the same kinds of minds, we
should instead try to ensure that everyone receive an education that maximizes his or her own intellectual potential. (Gardner, 1993, p. 71)

Gardner has several ideas just how an individual-centered school would operate (Gardner, 1993, pp. 72-74). First, he describes several roles that would be carried out within the school system. An assessment specialist would provide regular, updated views of the particular strengths, inclinations, and weaknesses of the children in the school. Standardized tests could not be used for this assessment. Testing should be intelligence-fair and developmentally appropriate, and it should lead to recommended activities for a particular child with a particular intellectual profile. Gardner believes, however, there is a place for standardized tests, but only when a more focused intervention is needed. They should never be allowed to dominate assessment. The assessment specialist shares findings with students, parents, teachers and with the student-curriculum broker. This broker then recommends which courses the student should elect. It is important for the student to learn his own strengths so he might choose courses more suited to his own intelligences. Even if the courses are mandated, there is no reason they must be taught in the same manner.

The school-community broker in Gardner’s individual-centered school searches for educational opportunities for the student in the community. The goal is that the student will discover a vocation or avocational role that matches his own profile of intelligences. The role of the individual teacher is not diminished in any way. Master teachers would make sure that the unique needs of individual students are being well served.
This kind of school should lead to students feeling better about themselves. On the other hand, in schools where only one standard of competence is available, most students end up feeling incompetent. Gardner's school would encourage the unique blend of intelligences in each student and would foster deep understanding in several core disciplines. The school creates an atmosphere in which students can explore novel stimuli and unfamiliar situations. Students would study traditional subjects in untraditional ways. They explore particular aspects of material in depth and address issues that confront professionals in that discipline, such as trying to make sense of conflicting reports of an historical event (Gardner, 1993, p. 75).

According to Gardner, Arts PROPEL could serve as a model for learning with projects. Gardner's ideal school would have domain projects and portfolios and assessment would be examining the final product and the thinking it required to assemble it. Gardner sees the first part of the school day devoted to traditional subjects, but in the afternoon, the students and teachers venture out into the community for further exploring and learning. Students are prepared for these experiences by working related in-class projects and through discussions. They are "debriefed" afterward in parallel ways (Gardner, 1993, p. 76). Again drawing from Dewey, Gardner believes in a strong educational bridge with the community.

Gardner highlights three important issues that have been a part of the experiments implemented by Project Zero, that would be a part of his individual-centered school. First, the issue of the educational bridge with the community; second, identification and assessment of intellectual strengths in pre-schoolers,
and third, identification and assessment of intellectual strengths in grade school children. Like the Key School (an Indianapolis public grade school influenced by multiple-intelligence theory), Gardner's ideal school would take students into the community and bring the community to the students. Community members volunteer to share their expertise by working with small groups of students. Older students would have more structure in their exploration. Gardner explains that at Project Spectrum, another program developed at Project Zero, many of the innovations he suggests for the individual-centered school have been tested. Spectrum was a research project in the mid 1980s to determine whether distinctive intellectual strengths could be identified and assessed in children as young as four years old. In a continuation of Project Spectrum from 1988 to 1993, researchers worked with children in grades kindergarten through second grade in Massachusetts. At the Key School, a record of the student's own preferences is added to the student profile.

When a student reaches the third grade, he and his parents meet with a member of the assessment team to review the variety of strengths and preferences he has exhibited thus far. Together, they choose the three apprenticeships he will pursue within the school and community in the coming years. (Gardner, 1993, p. 77)

Gardner believes that although the theory of multiple intelligences should not be used to dictate a course of study or career, it is a reasonable basis on which to make suggestions and choose electives. It is good that Gardner adds this disclaimer. For a child's future scholastic direction to be determined or at least suggested by third grade, or before the child is ten years old, is quite early.
Especially considering that each child matures in her own distinctive pace, could Gardner believe that third graders are all able to reveal their intelligence strengths at this age? To this point, Gardner's individual-centered school seems like a reasonable effort; however, with this suggestion, the direction his school takes becomes rather self-contradictory.

Gardner does not believe the obstacle to individual-centered education is financial. "So long as we choose to believe that the individual-centered approach is not valid, or, even if valid, simply not practical, it will appear utopian" (Gardner, 1993, p. 78). Gardner sees Arts PROPEL as the model for his individual-centered school.

Now to examine Eisner's view of educational reform. Eisner also appears dissatisfied with educational institutions at present, and addresses the areas where reform is needed in the schools. His approach is quite different than Gardner's. Eisner wants to manipulate existing institutions. Gardner does not want simply to manipulate institutions; instead he wants the schools to change fundamentally. Gardner wants art education to be the model for schools.

Eisner believes one factor that hinders significant educational reform is the "piecemeal and superficial way in which reformers think about educational reform" (Eisner, 1992a, p. 619). Many things in the school do not change and minor efforts to effect change do not last.

Efforts to help teachers learn how to teach inductively are not likely to succeed if the evaluation system of the school employs rewards other types of teaching. Efforts to encourage teachers to engage in reflective teaching are likely to be feckless if teachers have no time
during the school day for reflection. Efforts to create intellectual coherence in the student's understanding are likely to fail if the form that the curriculum takes makes coherence impossible. Improvement in teaching is unlikely as long as teachers get no useful feedback on the work they actually do in their own classrooms (Eisner, 1992a, p. 619).

Eisner explains that he thinks schools must think big about reform. According to Eisner, reform in schools should begin with an effort to understand the ways that schools actually function. Eisner believes examining standardized test scores will tell us little about the educational quality of schools. He believes schools should focus on the relation between processes and the outcomes of schooling. According to Eisner, it makes "no sense to prepare syllabi and curriculum guides for teachers that advocate a new direction for educational practice and continue to assess the outcomes of schooling on instruments that reflect older, more traditional views" (Eisner, 1992a, p. 625). "My hope is that educators will be moved to begin the kind of dialogue that leads to genuine reform in education, a reform that pays attention to what really counts" (Eisner, 1991c, p. 16).

Eisner makes some suggestions through a list of six aims that reflect what really counts in schools and ought to be included in any reform of education. First is teaching children that exploration of ideas is sometimes difficult, often exciting, and occasionally fun. Second is that what really counts in schools is helping students learn how to formulate their own problems and how to design the tactics and strategies to solve them. Third is the development of literacy (Eisner, 1991c, p. 11-16). Eisner does not clarify what he means by literacy. It is likely, however, that he is including to the ability to use the "senses as mechanisms for articulation of
thought. Literacy means more than simply being able to read or to write" (Eisner, 1985a, p. 166-167). The fourth aim is teaching the young the importance of wonder. The fifth is helping children realize that they are part of a caring community. Finally, the sixth aim is teaching children that they have a unique and important personal signature (Eisner, 1991c, p. 11-16). Eisner also adds that he believes education should provide opportunities for children to acquire skills of impression and also skills of expression. These skills are important if the student is to develop a personal signature. Uniformity of outcome is not a desirable when the assignment is to paint a landscape. He adds, "I am not arguing that such tasks should monopolize our programs, but we should at least have some semblance of balance" (Eisner, 1991c, p. 16). In support of multiple intelligences, Eisner concludes, "if we provided opportunities in school for [children] to display their interests and talents, we would find that virtually all children were gifted in some way" (Eisner, 1991c, p. 16). It is interesting that Eisner's version of DBAE does not reflect these ideas for reform in the same way that Gardner's ideas for reform are reflected in Arts PROPEL.

**Conclusions**

Gardner and Eisner use similar language to describe their views, yet their language is deceiving because they describe quite different theories of art education. It is of considerable importance that Eisner uses the language of a cognitive scientist to describe what must be considered a behaviorist-based theory of art education. That Eisner should have behaviorism as a basis for his theory of
art education is not surprising if we consider how Eisner explains that in his background at the University of Chicago, Benjamin Bloom, a behavioral psychologist and founder of Mastery Learning, was an intellectual mentor who "provided support and encouragement" (Eisner, 1993b, p. 5). By comparison, we should remember that Gardner's background at Harvard University, included work with the pioneering cognitive scientist, Jerome Bruner, who became a mentor (Gardner, 1989c, p. 55).

Eisner also presents his readers with many apparent self-contradictions. He frequently and approvingly quotes Dewey and acknowledges him as an influence on his theory, yet his design of DBAE is far removed from Dewey's theories about art education. For instance, from Dewey's perspective DBAE offers little in the way of genuine experience to the students. Eisner is a champion of qualitative research and yet supports quantitative assessment. He dislikes the technical model because of its preoccupation with objectives and yet endorses objectives for DBAE. He is against national standards, and yet promotes an art education that is intended to be implemented on a district-wide basis. Perhaps many of the conflicts we see in Eisner's writing comes from the fact that he appears to have no dominant idea that shapes all his analysis; rather he draws his ideas from a variety of sources and mixes them in various ways as he analyses various issues.

There are many differences between the writing of Gardner and Eisner. Beneath the common rhetoric, they describe cognitive science in quite different ways. Arts PROPEL and DBAE are also quite different art education programs,
reflecting the differences in understanding of cognitive science expressed by Gardner and Eisner. Arts PROPEL is based on cognitive science, DBAE on behaviorism. Another important difference between these two theories of art education rests on artistic production and the questions, how much and how often? For Gardner, production should be a major part of any learning in the arts. For Eisner, production is only one of four disciplines in the visual arts and should have only one-fourth of the time in the curriculum.

Gardner speaks of the importance of “intuitive ways of knowing” (Gardner, 1990, p. 51). This is a way of knowing that operates without the need for anything except opportunity. By contrast, although Eisner also addresses intuitive ways of knowing, there is no allowance in DBAE curriculum for intuition. Rather, he suggests that learning in the arts is not an “automatic consequence of maturation” (Eisner, 1993b, p. 6). He states “if the forms that constitute the arts or the sciences spoke for themselves we would need no programs in the schools to help students to learn how ‘to read’ them” (Eisner, 1985b, p. 25). He believes that one must taught in order to gain literacy in the arts (Eisner, 1985a, pp. 166-167); one cannot gain such knowledge intuitively.

In Chapter Five, we will explore further the relation between Gardner and Eisner as we examine new experiments in the field of art education. We will also look at the probable direction for art education between these two programs.
CHAPTER FIVE

CONCLUSIONS: KNOWING AND DOING

After more than a century of public education in America, the debates about art education have not been resolved. What part should art education play in the curriculum and how should it be taught? Should artistic learning grow from children doing things, or does knowing about art require, instead, talking about art? Should art education dismiss participatory learning and become, as some want, more like formal science and mathematics instruction?

The debate between Gardner and Eisner is reminiscent of the debate a century ago between G. Stanley Hall and Edward L. Thorndike. Should the emphasis in the curriculum be child- or individual-centered following the studies of Hall and Gardner? Should the emphasis be more science or discipline-based, like the theories of Thorndike and Eisner? The modern version of the debate, however, has an interesting twist. The debate in art education has traditionally pitted the scientists against the educators. The scientists, like Thorndike, wanted the more disciplined, efficient and scientific methods of teaching; while the educators, like Hall, have wanted more creative and expressive experiences with teaching centered on art production. Today, by contrast, it is the scientist, Gardner, who wants more art production experiences, while the art educator, Eisner, wants less art production and more focus on disciplines. Who will win this debate? Will the verbally talented children have another opportunity to excel while we fail to provide an avenue of expression for the children with visual, spatial, physical or personal talents?
(Gardner, 1990a, p. 54). We will look the art education field today and explore some of the new experiments taking place in some detail.

**New Experiments in Art Education**

"Thanks in part to the influence of theorists like John Dewey . . . the focus on artistic production remains strong in American schools even today" (Gardner and Grunbaum. p. 6). Gardner made that statement in 1986. The discipline-based methods of teaching art are now quickly spreading across the United States. The Getty Institute can claim the credit for this sweeping change in art education. Getty now has district and regional offices around the country which serve as localized granting institutions. They offer grants for research fellowships as well as grants for professional development for teachers, administrators, and school board members. In addition they provide ongoing assistance to participating school districts to strengthen implementation of DBAE in their schools.

In a telephone conversation with the Getty Institute, I was given the telephone number of Getty’s Michigan regional office, directed by Ms. V. Rosenberg. On December 2, 1996, I had a conversation with Rosenberg. She was very informative about programs across the country that Getty is sponsoring. One of the projects she mentioned is at the University of Tennessee where DBAE curriculum for theatre and music is being developed. Rosenberg believes that Nebraska has the most exciting and finest DBAE program in the nation right now and gave me the name of M. Proskovec, coordinator of the program. Rosenberg also gave me the name of B. Wilson, who chairs the Art Education Department of
Pennsylvania State University. Penn State has been very active in the discipline-based art education movement since its inception. It was the site of the pivotal conference in 1965 which formally introduced the art education field to disciplines. Penn State also has one of the few art education departments in the country offering doctorates.

On December 10, 1996, I had a telephone conversation with B. Wilson. In addition to his administrative duties and teaching at Penn State, he also evaluates experimental DBAE programs for the Getty Institute. According to Wilson, Getty recently sponsored DBAE implementation experiments in six locations around the country. Each location was to work with a local state university to develop curriculum for implementation in kindergarten through high school classrooms in their districts and, hopefully, in their states. The locations were in Florida, Texas, Nebraska, Ohio, Minnesota and Tennessee.

Wilson stressed each program and curriculum is developed locally because the Getty Institute has been reluctant to develop DBAE curriculum or even curriculum guidelines. According to Wilson, either curriculum or curriculum guidelines would be helpful. On the other hand, he also feels that guidelines might take away from local initiative. Interestingly, these new DBAE experiments are structured in curriculum units or modules. All of the units are art-production centered and all can fit into any curriculum. Wilson emphasizes that all instruction grows from the production activities of the students. Notice, this deviates from Eisner’s view of DBAE, which requires sequence structure within and between
grade levels. Rather, this sounds like curriculum from Arts PROPEL, with curriculum modules (like domain projects) and instruction growing out of production activities of the students. In some localities there have been experiments with integration of curriculum units into language arts and social studies. According to Wilson, some of the teachers working with these "new" DBAE experiments have worked with Arts PROPEL as well. Wilson believes that Nebraska is, by far, the most successful experimental location in the country because their program is implemented statewide. Grand Island, Nebraska, particularly, is the most successful district-wide program. He also feels Nebraska should be thought of as a leader in the country for DBAE implementation.

With financial support from the Getty Institute, Nebraska does have a thriving DBAE program, which is called Prairie Visions. They promote DBAE operating from the Department of Education for the state of Nebraska. S. Brown is the program director and M. Proskovec is the program coordinator. On December 11, 1996, I had a telephone conversation with Proskovec. Nebraska does not mandate as a state that DBAE will be used as a part of school curriculum. However, in addition to sophisticated web cites for both the Department of Education and Prairie Visions, workshops are offered during the summer for all new teachers and professional development workshops are offered for all teachers, principals, and school board members where the Nebraska version of DBAE is discussed in detail. The workshops are widely publicized and fully attended. Both of these workshops will be explored.
When examining the materials from their summer 1996 program, titled *Prairie Visions 1996 Summer Institute on the Visual Arts*, there is a disclaimer which says “Opinions expressed by individuals presenting in this Institute are not to be construed as official policy of the Nebraska Department of Education.” The material for the summer institute is contained in a large, well organized, aesthetically pleasing notebook. The summer institute is actually three weeks in length. Week one is spent at the Joslyn Art Museum in Omaha, week two is at the Omaha campus of the University of Nebraska, and week three is spent at local school district sites. Prairie Visions literature says they are, “The national center for leadership and collaborative practice in discipline-based art education.” Their mission is to “serve education as a center for leadership, innovation, and excellence in discipline-based art education through professional development and curriculum design programs, supported by research, tested by practice, created through networks, built upon collaborative ventures, and guided by consensus.” Grand Island is the school district they use as an example of their greatest success. According to Proskovec, the schools in the Grand Island district have sent every principal, and at least one teacher from each school building, and even school board members to their summer workshops.

Prairie Visions bases their version of a DBAE on four disciplines: cultural/historical, critical, aesthetic, and technical and creative. There is also a multicultural component at the summer workshop. Various sessions and speakers address each of the areas, followed by corresponding small group sessions for
discussions. During the second week, “thematic” curriculum planning is discussed. Thematics is a term Eisner uses. It suggests a curriculum built on universal themes and experiences. The third week, when the workshops travel to various school district sites, the topic is local implementation planning. Inserted into the information for the third week of the workshop is a sheet entitled “What Does DBAE Look Like in Practice?” Characteristics of the DBAE Teacher, the DBAE Classroom, the DBAE School, and the DBAE District are listed. The characteristics describe DBAE in practice and are guidelines for planning, developing, revising, and evaluating a DBAE program. We will look at these guidelines in some detail.

The guidelines for a DBAE Teacher are:

- foundations in the disciplines of art and understanding the relationships between them
- knowledge of art as a process of inquiry
- commitment to teaching art(s)
- commitment to integrating/infusing art into the total learning of the student
- commitment to teaching art as a discipline (subject)
- has defined a program of instruction in the visual arts - teacher’s curriculum - formative and summative assessment plan
- utilizes authentic assessment and portfolios of student progress
- provides rich learning experiences through arranged museum visits and accessing museum resources through technology and collaborates with other staff to deliver instruction
- recognizes role the arts play in life; feels confident in the world of art
- staff development participant in DBAE; develops expertise by continuous learning in art/renewals/advanced study, etc.
- commitment to advocacy for the arts in education

The guidelines for the DBAE Classroom are:

- has a DBAE teacher (s)
- environment includes reproductions of art work on the wall: student work (art writing, etc.): designed learning environment
- students are inquirers
• evidence of systematic, sequential curriculum
• attention given to varied learning styles
• learners make art, write about art, interpret art, reflect on art, etc.
• students access/report progress (e.g. electronic portfolio)
• interaction/visits with art resources or the community
• resource materials: books, reproductions, supplies
• technology readily available with opportunities to use it meaningfully (computers, AV equipment, distance learning, e-mail, Internet)
• world-wide communication possibilities
• evidence of parental support and community involvement
• evidence of administrative support and involvement

The guidelines for a DBAE School are:

• has a 5-year plan and detailed yearly plans for program implementation and continued development
• art is part of a balanced core curriculum
• commitment to continuous professional development for staff
• arts curriculum committee that includes administration, teachers, parents, students, community and museum representatives
• works with the visual and performing arts framework to implement curriculum
• art work is visible in the building
• instructional leaders in the arts: principal and arts specialists with redefined roles as collaborators
• leadership and organizational structure supports collaboration and DBAE
• provisions for release time, paid time for writing and other professional involvements and contributions to the field
• 80% minimum staff buy-in/commitment (critical mass)
• community outreach/business and cross-community collaborative relationships
• funds/supports arts events (exhibitions, etc.)
• partners with other schools
• report relevant progress to the district and the community

The guidelines for a DBAE District are:

• DBAE leadership structure: board, central administration, arts leaders (coordinators)
• written buy-in/commitment: board policies on the arts
• key community stakeholders (businesses, arts organizations, museums, etc.) show support
• DBAE curriculum/policy with regard to K-12 curriculum incorporates national standards and state frameworks
• a family of feeder schools (K-12) is in place
• student competency in arts common across schools  
• arts are line itemed in the budget  
• interaction with artists in organizations in the community  

These are certainly all-encompassing guidelines. They reveal a great deal of careful planning, as does all of the material from Prairie Visions and the Nebraska Department of Education. It is interesting how many of the ideas from Dewey and from Arts PROPEL are blended into these guidelines, such as using portfolios as an assessment tool, using museums as a resource for enrichment, and urging community involvement. These guidelines include a systematic, sequential curriculum, however, the curriculum is actually presented in units or modules which lend themselves to a spiral curriculum (instead of a sequential curriculum). In other words, the rhetoric sounds like they come from Eisner's DBAE; however, beneath the rhetoric, the form and substance of the curriculum design is actually more like Gardner's Arts PROPEL.  

In addition to the information about their summer program, Proskovec sent information on the Nebraska K-12 art curriculum called "Frameworks in the Visual and Performing Arts." This is also a large, well organized, and aesthetically pleasing notebook. We will examine this notebook in some detail. Inserted in the front of the notebook are four separate packets containing a total of 32 art reproductions. The packages are labeled "stylistic analysis, aesthetic perspective, historical context, and aesthetic context." Also included is a Prairie Visions information booklet which lists their state advisory council and staff members, as well as information about Prairie Visions, published by the Nebraska Department of
Education. The table of contents shows the structure of the material. After initial introductions and explanations, the bulk of the notebook is divided into sections dealing with the artistic disciplines of dance, theatre, music, and visual arts. The final sections of the notebook deal with school improvement, assessment, district planning, classroom planning, plus integrated learning and resources. There is a purpose statement as well as a mission statement. In the purpose statement, the Nebraska Department of Education writes their "Frameworks provides direction, focus, coordination, and guidance for public and private schools in the areas of dance, theatre, music and visual arts to meet the challenges of Goals 2000, the Federal education reform initiative supported by the State of Nebraska" (Nebraska Department of Education, p. 1). The mission statement is:

The mission of arts education in Nebraska is to provide comprehensive arts experiences to empower all students to enrich their understanding of themselves and the world, and to embrace the extraordinary potential of the arts for communication, celebration and creativity. (Nebraska Department of Education, p. 3)

In addition, a belief statement and goals for arts education are detailed. The belief statement says:

- The arts promote greater understanding of the human experience.
- Arts education integrates and expands learning across areas of study.
- A quality visual and performing arts curriculum is an essential part of the core educational program for all students.
- The arts foster creative and critical thinking, self-discipline and lifelong learning.
- Through the arts, people celebrate and understand themselves, others and the world in which they live.
- The arts are a powerful means of communication among individuals, generations and cultures.
- A quality visual and performing arts curriculum includes theatre, music, dance and visual arts.
• A quality visual and performing arts curriculum encompasses process, performance and production, criticism, aesthetics and historical and culturally diverse perspectives (Nebraska Department of Education, p. 4).

Listed under "Goals for Arts Education," learners will:

• Recognize and value the connections between the arts and their own lives and environments.
• Recognize the intrinsic and aesthetic value of the arts in their own learning and creative processes.
• Recognize and investigate the many roles of arts and artists in the past, present and future.
• Exhibit visual, kinesthetic, auditory, oral and written communication skills in responding to their own artistic expression and that of others.
• Be able to develop criteria based on knowledge and experience in evaluating their own and others' creative expressions or work.
• Understand connections between the arts and other fields of study.
• Recognize the importance of diversity and equity in the creation, performance, interpretation and evaluation of the arts.
• Solve problems through the visual and performing arts (Nebraska Department of Education, p. 5).

This DBAE program relies a great deal on aims, goals and objectives. This would tend to make the reader believe this program follows Eisner's suggestions for DBAE as Eisner frequently writes about the importance of aims. He explains they are important as a "kind of education policy statement—they tell the world what is valued for a school or classroom" (Eisner, 1987a, p. 19). He continues that aims are translated into goals, and goals into objectives.

Discipline-based art education does not attempt to reduce important educational aims to a trivial array of specific objectives: six to twelve objectives for a subject for any academic year may very well be adequate for guiding curriculum planning and assessment learning. (Eisner, 1987a, p. 19)
For Eisner, objectives "specify the particular behavior a child is to be able to display after an instructional period" (Eisner, 1987a, p. 19). Eisner also believes objectives are necessary because accountability is so strong in the schools. Gardner, by contrast, responds to suggestions about the necessity of detailed curricular purposes by saying what is needed for accountability purposes is evidence that, in general, a cohort of students is advancing along dimensions of knowledge and practice considered important by knowledgeable experts in the field. (Gardner, 1990, p. 59)

When looking carefully at the belief statement and the goals for this Nebraska state program, we discover they place a great deal of emphasis on the social nature of art education, such as, people understanding themselves and others and recognizing the connections between the arts and their own lives. These ideas derive from Dewey. Eisner refers to Dewey frequently in explaining his position on art education. However, it is Gardner who embraces Dewey's thoughts about art education and includes them in his theory of Arts PROPEL. We should also recall that Gardner believes so strongly in the importance of the social nature of education that he makes the community an important part of his model, individual-centered school.

The goals for assessment in this Nebraska literature varies from Eisner's version of assessment for DBAE as well as from the materials which Getty circulates. We can recall that Eisner's suggestions for assessment in art are assessment techniques modified from traditional education subjects. The goals of this Nebraska DBAE experimental program suggest multiple intelligences are
important in assessment. For example, the student will exhibit visual, kinesthetic, auditory, oral and written communication skills. Gardner's Arts PROPEL also assesses many intelligences, as opposed to the majority of courses in the general curriculum which rely almost solely on linguistic intelligence.

The bulk of the Nebraska notebook contains instruction about how the K-12 curriculum is to be used and is divided into five sections: Dance, Theatre, Music Visual Arts, and The Arts: An In-Depth View. Each of the first four sections includes an introduction explaining the history of the art form and its role in education today, definitions of approaches to the arts and processes of learning. A concept chart suggests how questions can begin discussions about content in the arts. A one-page explanation of each content cell from the chart is also included, as well as a grid prepared for each approach to each art form. The fifth section has examples of content cells from sections on each of the disciplines with possible applications for performance objectives, along with narratives containing additional information about content (Nebraska Department of Education, p. 6). We will examine the visual arts section.

The introduction in the visual arts section contains the following statement:

While visual art should be studied for its own sake, it also offers wonderful opportunities for interdisciplinary links to other arts and other fields of study. For example, the visual arts can aid in the understanding of historical events from diverse perspectives, and art production can help students explore mathematical principles in concrete ways. . . . Our society has come to value creative people who can use imagination to offer alternative solutions to critical problems. The visual arts, which value intuition, imagination and originality, can offer ways for learners to explore their own creativity and that of others. (Nebraska Department of Education, p. D1)
What a wonderful statement, "Our society has come to value creative people who can use imagination, etc." Now that is truly music to the ears of those interested in arts education. The opportunities for interdisciplinary links to other fields is another interesting statement. This idea also comes from Dewey, who believed the arts should be integrated with the rest of the curriculum. Gardner's Arts PROPEL domain projects and the spiral curriculum certainly lend themselves to similar integration.

The visual arts section of Nebraska's curriculum notebook begins with a grid labeled "Inquiry into Visual Arts" (Nebraska Department of Education, p. D2). There are four approaches to be used and four ways of dealing with each approach. The approaches are technical and creative, cultural/historical, critical and aesthetic. These four approaches are explained as production, art history, art criticism, and aesthetics. Technical and creative seems an odd choice for describing their production element. They do not elaborate on its meaning; however, in the "dance" section of the notebook, they indicate that technical refers to the skills of production and creative refers to the application of those skills. It would appear they believe both are important. The four ways of using these approaches are perceiving, interpreting, evaluating and connecting. They are described as follows: perceiving is the way by which one analyzes the form of a work of art or the vehicle that carries the idea; interpreting is asking what a work of art expresses; evaluating is reflecting on the integrity of our own work and the work of others; and connecting is considering how art relates to life (Nebraska Department of Education, p. D3). They
have given importance here to both perception and reflection, which are such
ingredients of Arts PROPEL they are used as part of the acronym PROPEL.

Of particular interest in this section are the pages devoted to describing
evaluation. As so much of the art education theories of both Gardner and Eisner
have to do with evaluation, we will explore how this program views evaluation in
some detail. There are guidelines for each of the approaches, that is, technical and
creative, cultural/historical, critical and aesthetic. The pages devoted to evaluation
include performance objectives for each approach. In the production approach,
learners will:

- Evaluate the effectiveness of the medium and techniques in their own work.
- Evaluate the success of their work at accomplishing its purpose
- Make proposals for changes that would make the work more effective.

These performance objectives are addressing self-assessment. Under a heading of
“Sample Activities” it says, “Learners analyze their own works of art for functional
and artistic success and suggest ways they might change them to make them more
effective” (Nebraska Department of Education, p. D6). These statements indicate a
belief that self-assessment is an approach to evaluation they encourage. Likewise,
self-assessment is a very important element in the assessment process in Arts
PROPEL. Gardner believes when students become involved in self-assessment it
completes a PROPEL circle.

It asks students to take the reflection skills they have developed for
and through their own working process, and use those skills to
evaluate their work upon completion or retrospectively. By doing so,
the students add a great deal to the information that teachers are
At least as important, however, is the increased amount of information that comes back to the students themselves. Students become responsible for comparing their work to what they were asked to do, to their own personal standards, to the work they have already done. (Project Zero, Harvard Graduate School of Education, p. 31)

On the evaluating page of the Nebraska notebook for the cultural/historical approach, performance objectives are as follows:

- Evaluate a work of art from at least two different cultural/historical perspectives based on historical investigation.
- Discuss the criteria that their own culture uses to evaluate art works.
- Interpret the historical and contemporary value of an artwork and predict its future value.
- Explore how the evaluation of a work of art has changed over time (Nebraska Department of Education, p. D10).

In the critical approach, the evaluating performance objectives include:

- Explain and justify their own criteria for judging artwork.
- Write a critical essay evaluating a work of art (Nebraska Department of Education, p. D 14).

Finally, in the aesthetic approach, evaluating performance objectives ask the student to:

- Compare and contrast how people have evaluated works of art in different times and places.
- Demonstrate a knowledge of the various purposes art can serve in society.
- Cite examples of ways in which society has used art to influence its members. Discuss positive and negative aspects of this (e.g., propaganda, commercialization).

There is a separate section in the notebook devoted to evaluation in the visual and performing arts.

Assessment in the arts reveals what Nebraska's learners know and are able to do within the areas of Dance, Theatre, Music, and Visual Arts. Assessment is designed to be an ongoing facet of learning. Process and product are both important in arts assessment. Performance, art making, talking, writing, and thinking all contribute to
the design of assessment strategies. (Nebraska Department of Education, p. G1)

Process and product are key phrases in Arts PROPEL: “Domain projects emphasize process as well as product” (Project Zero, Harvard Graduate School of Education, p. 43). Gardner explains the Arts PROPEL position on process and product.

Even in the most “skill-oriented” domain project, there must be a certain amount of emphasis on “process” in addition to product.” That is, students must be concerned with the means of making art, and not only the final product; and they must learn to value these means for their own sake – as opportunities to learn, to reflect and grow. (Project Zero, Harvard Graduate School of Education, p. 16)

The evaluation section of the notebook is designed to be an aid to teachers designing curriculum on the local level. There is an interesting statement early in the section: “Assessment designers recognize that multiple assessment activities better support the educational mission by providing continuous and varied feedback” (Nebraska Department of Education, p. G4). This section also stresses using a variety of assessment procedures to develop a more complete picture of what learners know and can do. “Assessment is an ongoing part of the learning experience rather than a culminating activity isolated from the process” (Nebraska Department of Education, p. G13). Again, these statements refer to multiple intelligences and multiple assessment techniques. In Arts PROPEL assessment is ongoing and in multiple forms. It would appear that Gardner’s theories of evaluation and assessment have had a great deal of influence on assessment in this experimental curriculum guide. On the other hand, neither in Eisner’s own theories
of evaluation nor in the materials from Getty is evaluation and assessment addressed in this manner.

The rest of the section is devoted to rubrics for the four disciplines of dance, music, theatre, and visual arts. Each rubric is also accompanied with a vignette.

Performance objectives described for assessment for middle school are:

Examine a particular work and discuss how form, symbols, techniques, and medium construct meaning. Use symbols from contemporary society to express ideas. Analyze and discuss the sources of their own works and of others' works. Synthesize multiple ideas or views in their work. (Nebraska Department of Education, p. G34)

While this performance relies heavily on linguistic skills, it does add an element of reflection. This is also an important part of the learning and assessment in Arts PROPEL.

In addition to performance objectives, there are learning objectives and assessment objectives for each of the four approaches (cultural/historical and critical, aesthetic, technical and creative, and historical) at different grade levels (high school, upper elementary/middle level, and primary). In addition, each level is divided into four skill levels; advanced, proficient, basic, and in process. For example, the assessment objective for an advanced project in the technical and creative approach for all of the levels is the same. “Learner has created a visually successful work of art using elements of the visual arts to express his/her ideas effectively” (Nebraska Department of Education, pp. G 33, G 35, G 37).

Vignettes are offered as examples of how to make the assessment fit the activity. We will examine the vignette designed for high school. Students are
assigned a project that requires they use knowledge gained during their high school careers. They should consider the four historical styles and cultures presented this year and focus on their favorite works of art. They should also think about the meaning of works of art and how they function in their societies and characteristics of style that all the artists use to express that meaning. One learner works with medieval manuscripts. She "illuminates" a contemporary book that has meaning to her. She finds images that symbolize her interpretation of the text's meaning. Learners also write short papers discussing the research they have done on the chosen historical works and the connections they have made to their own works. They also consider how successfully they solved this visual problem. There are both written goals and performance objectives, which can be summarized as:

- learner has discussed the historical work,
- learner has created her own work or art,
- learner has expressed her ideas,
- learner has written about his own work (Nebraska Department of Education, pp. G 32-G33).

This vignette reveals much less dependence on linguistic skills than either Eisner's version of DBAE or the curriculum sampler from Getty. The production work, in this case, an illumination, was directly linked to the historical learning. This vignette illustrates how much of this curriculum has been taken from Arts PROPEL. There are elements of both reflection and self-assessment. In addition, the learning grows from the student's own experience of production.

The last several pages of the assessment section are devoted to portfolio assessment. It appears the portfolio assessment theories of Gardner have also
found their way into this DBAE curriculum. There are listings of the purposes of portfolios in arts education assessment and of the goals for a learner's portfolio, and a large section is devoted to what the arts portfolios could include. Also, the portfolio could include examples of learners' work or performance in the arts (in visual arts this includes slides, actual works of art, digitized images, and record of exhibitions). Examples of learners' responses to works of art, plus records of learner involvement in the arts, are included, as are examples of learners' reflections on their own growth in the arts and examples of teacher assessment. The notebook stresses that the portfolio becomes a clear record of learners' growth in the arts.

B. Wilson from Penn State has written a vignette, which is included in this material, about a child's contribution to DBAE assessment. This is a story about a second grade student, "Jeremy," in Columbus, Nebraska, whose crayon drawing of a stand of trees through whose trunks one could see a train passing in the distance was selected to be exhibited at the State Department of Education. The Columbus Public Schools' DBAE coordinator met Jeremy at an open house at the Department and talked with him about his drawing. After the exhibition, Jeremy's drawing was returned to his portfolio. During his third grade and fourth grade years, he added to his portfolio. Near the end of fourth grade, Jeremy and some fellow students were invited to present and discuss their portfolios in an evaluation session at which the same DBAE coordinator was present. As Jeremy laid out his works, the coordinator was puzzled because the drawing she remembered from the State Department
exhibition seemed different. While it was the same subject matter, the qualities were richer and it had acquired a mood that evoked a sense of mystery. Then she saw there were two versions of the drawing. Jeremy's teacher recalled that after studying American artist Philip Evergood's painting "Sunny Street," Jeremy decided to rework his subject. When one of his classmates said, "Jeremy, that's the same thing you did last year," he replied, "I know how to make it better now." (Nebraska Department of Education, p. G36). The DBAE coordinator, who also served as a member of the Prairie Visions student assessment team, reports they have now developed a portfolio exercise based on Jeremy's process.

Now, throughout Nebraska, Prairie Visions students (1) select an artwork from their portfolio, (2) select and study the work of an artist, (3) decide how the artist's work informs their artwork and "suggests" ways that they might revise it, (4) make a second version, and (5) write about the artist's work, what they have learned from the artist, and the way the study of another's work influenced their artwork. (Nebraska Department of Education, p. G46)

As a final assessment of a product the portfolio assessment is viewed as valid. It is only one of various forms of assessment used and should help lead to an authentic assessment. Under the heading, "What does a Portfolio Look Like at the District Level?", is a comment on collection and management of portfolios.

It is very difficult to keep records and provide individual audio and videotapes for large numbers of students. It is still in the experimental, trial-and-error stage and needs constant revision. The more the student is involved in developing criteria and self assessment, the more meaningful it becomes. (Nebraska Department of Education, p. G50)

It is not hard to imagine the difficulties encountered when beginning a program of this nature.
In Grand Island, Nebraska, DBAE is in every school (except the high school) at every level. J. Stern is a Grand Island middle school art instructor and is a leader in his district for the inclusion of DBAE curriculum units into the curriculum of the school. After receiving his name from Proskovec, I spoke by telephone with Stern on December 19, 1996. Stern says Grand Island will soon begin their fifth year of this DBAE experiment. He explains the Grand Island middle school operates on a nine-week rotation system. Art is a required course and the students have class every day for nine weeks per year. He explains he attempts to tie art experiences to material covered in the other classes, especially with social studies and language arts. He is also working with the Nebraska Public Television Network producing a show that combines social studies with art production. Other than that, art is not integrated into the curriculum of the school; rather, it is taught as a separate course.

Stern explains that curriculum sequence is involved in his teaching only in the sense that he moves his students from concrete to abstract ideas during their three years with him. He begins the sixth graders working with geometric forms. The seventh graders move to contour drawing and the eight graders learn perspective. DBAE is popular with the students as well as with the instructors. According to Stern, the students enjoy learning about art history and the other disciplines of the visual arts along with their production activities. All of the elementary schools in Grand Island use DBAE, as does the middle school. In the high school, art is an elective course, and they do not participate in the DBAE experiments.


Comparison of DBAE Experiments with Arts PROPEL

The DBAE experiments invite some interesting comparisons with Arts PROPEL. On the surface, one may think Eisner is winning the battle for control of art education. Certainly, Getty, Eisner’s chief supporter, has been very active across the nation, in promoting the implementation of DBAE programs. However, what exactly are they implementing? It isn’t the DBAE that Eisner describes and that Getty started with, nor is it the DBAE that Getty distributes with their curriculum sampler. Beneath the rhetoric, this Nebraska program has a remarkable resemblance to Arts PROPEL. For instance, this Nebraska DBAE addresses all of the fine arts, dance, theatre and music, as well as the visual arts, as does Arts PROPEL. For the purposes of this study, however, only the visual arts from Arts PROPEL were examined.

It may be helpful here to look in detail at curricula and assessments from Arts PROPEL. As we recall, domain projects are long-term studio projects that focus on issues central to the visual arts. They emphasize process as well as product, encouraging student’s active involvement in experimentation, research and revision. They integrate production with perception and reflection. They provide opportunities for self-and peer-assessment as well as teacher-student assessment (Project Zero, Harvard Graduate School of Education, p. 41). The long-term investigations in domain projects stimulate students’ evolving understanding of concepts and ideas. An important factor in domain projects is how open they are for
infinite numbers of solutions. Through integrated activities, students are given a more responsible role in the studio process.

In order to make this possible, the teacher is challenged to present lessons that engage students in their own explorations, and to provide them with both the structure and the freedom necessary to make the choices of how their work will be. The teacher's role then, is not to design a creative and aesthetic product to model and instruct students to make; the teacher instead poses a problem and challenges students to invent solutions to that problem (Project Zero, Harvard Graduate School of Education, p. 41).

For a brief overview of assessment in Arts PROPEL, we can recall that assessment needs to be made public; that is, students and other interested parties should have a clear sense of what is happening and why. Assessment must be based on shared criteria, and must involve students in developing and using the criteria. Finally, the assessment must be integrated into and supported by the ongoing class process.

The portfolio is urged as a suitable assessment tool in the visual arts. The portfolio in the visual arts is not a new idea. They have been used traditionally by both artists and students of art to demonstrate accomplishment, generally in the form of selected pieces of finished work. The Arts PROPEL visual arts portfolio differs in a number of ways from the traditional portfolio:

- Whereas traditional portfolios are designed for some outside evaluator, the primary audience for the PROPEL portfolio is the student. The portfolio is a resource that enables students to track progress, generate ideas, think visually, and communicate with others about their work.

- The PROPEL portfolio places a much greater emphasis on the thought processes that go into making art than do traditional portfolios, which tend to be concerned primarily with end products.
• PROPEL portfolios are kept in all visual art classes, regardless of the level of the class; they are not reserved for the advanced levels.

• Assessment of the portfolio is a collaborative effort between students and teacher. By contrast, the traditional portfolio model leaves most, if not all, of the assessment process in the hands of the teacher or other evaluator.

• Though many teachers have kept folders for practical reasons such as storage and grading, the PROPEL portfolio is viewed as an active and interactive part of classroom learning.

• Selected documentation of the portfolios may also travel from classroom to classroom, grade to grade, as the student advances, thereby demonstrating to both the student and his or her several teachers how the student has developed over time. (Arts PROPEL, Harvard Graduate School of Education, p. 75).

The primary goal of Arts PROPEL has been to create assessments that will provide the most beneficial feedback possible to the student in the art class, and then move towards institutional assessments that would inform and support desired classroom practice. (Arts PROPEL, Harvard Graduate School of Education, p. 75)

The PROPEL portfolios share with domain projects a focus on process orientation, student reflection, and self-assessment. In fact, this type of portfolio is a natural extension of the domain projects. The portfolios provide evidence of learning.

Ideally everything a student does might be retained in a portfolio.

Reviewing portfolios has been made a little easier by a recommended set of supplemental materials developed by Arts PROPEL to help guide the reader.

• Cover sheet: Student's name, class, and date

• Annotated table of contents: Provides a brief description of the contents of the portfolio, including a description of the projects and the time dedicated to each, along with any other relevant background information on the projects.

• Background information about the student: This can be obtained through an "entry survey" that students complete at the beginning of a course. Such a survey helps the teacher understand the experiences, interests, and knowledge that the students bring to class.
• Student work and reflections: Student work is comprised of drafts and final works, accompanied by journal entries. Reflections include, but are in no way limited to student self-assessments. All work should be signed and dated. Typically, the backbone of the portfolio is a series of domain projects, each of which contains along with the final product, preliminary work, research, inspirational resources, reflection, and assessment by the student, by peers, and by the teacher. The number of domain projects depends on length of the course, length of the project, and age and grade level of the students.

• A mid-semester portfolio review by the teacher, or the teacher and student together.

• A final assessment of the student's work by the teacher, or the teacher and student together.

Because of its reflective nature, portfolio assessment serves as a potent means of simultaneously documenting and fostering students' understanding of art and of themselves as artists. For the student, the portfolio can potentially become the center of an entire, unified working process (Arts PROPEL, Harvard Graduate School of Education, p. 77).

By examining the following domain project in detail, we can see the basic elements of Arts PROPEL in a classroom setting. "A Self-Portrait Domain Project" is designed as a year-long curriculum and was developed for middle school students. It was designed for thirty-two, seventy-five minute classes meeting once a week. The project is primarily geared to meet the needs of middle-school students at a stage in their physical, social, and emotional development in which their individuality is increasingly more apparent to themselves and others. This project offers students an opportunity to have experiences that are uniquely their own. The project is designed not only to help students explore and portray their own unique
“portrait” but also to introduce them to diverse ways that have been developed in the visual arts to capture the essence of a person (e.g. caricature, proportion and distortion of the human face, photographic portraits, computer generated images, etc.)

This project demonstrates the spiral curriculum well. We can recall that the spiral curriculum begins with rudiments students have learned and builds upon them by adding more complex and subtle categories and codes, constantly circling back to build upon previous understandings (Bigge and Shermis, p. 140). “The first three activities in this domain project introduce three areas of focus that are then integrated with and further developed in each of the later activities” (Project Zero, Harvard Graduate School of Education, p. 48).

To continue with the description of this domain project, the first activity, “Who Am I?” is an introduction to the concept of a portrait and an investigation of the advantages and limitations of representing people in different symbol systems, both verbal and visual. The second activity, “What’s Important?”, is an introduction to the process and value of self-assessment including a series of exercises to help students identify and understand criteria for evaluation of their own learning and progress. The third activity, “An Historical Overview”, introduces students to a range of artists and the portraits they have made so that students can begin to see how portraits are influenced by their historical context as well as the style, medium and intent of the artist. By looking at reproductions and learning about relevant historical contexts, students start to perceive and discuss the visual evidence that
provides clues about such considerations as epoch, style, intent, media, process, and affect.

In each of these activities, the student is guided through a series of lessons, researches, exercises and/or experiments to prepare them to create a self-portrait. In addition, the concerns and considerations of the introductory three activities are reinforced and interwoven in each of the other activities. For example, the portraiture activity, ("Putting It Where It Belongs On Purpose"), designed for three class periods is intended to teach students the position, size, and relationships which exist among the parts of the human face. Students are introduced to the relationships of the "average" face; they are asked to create an accurate proportion map of their own face; they are challenged to create a "monster" by altering the proportion, size and shape relationships of the human head. Students are introduced to the work of selected artists who have altered human proportion to create a specific effect. They are also given the opportunity to look at and discuss each others' proportion studies, maps, and monsters to discuss how actual proportions deviate from the norm and to explain what alterations they employed to create their monsters.

The final activity, "Putting It All Together" asks students to create a composite self portrait by assembling all of the individual portraits, preliminary studies, and accompanying notes and resources to serve as an open portfolio. Students would thus be able to look over the year's accomplishments, their own and their peers, and note changes, ideas and discoveries, influences, progress, and
effort (Project Zero, Harvard Graduate School of Education, p. 48). The portfolio assessment works well for this domain project.

By comparison, the curriculum in the Nebraska DBAE is divided into units, which lends itself to the spiral curriculum. Surprisingly, there is not much evidence that the curriculum is sequential in the way that Eisner insists is important.

Goals of discipline-based art education are not likely to be realized by skipping about from material to material, task to task. Learning to perceive, create, comprehend and judge require as much or more continuity of effort than can be learned and applied by following the rules. (Eisner, 1987a, p. 14)

On the other hand, Gardner describes learning in the arts as "less sequential, more holistic and organic, than other forms of knowing" (Gardner, 1990, p. 54). This curriculum is much more like the domain projects in Arts PROPEL than the curriculum suggested by Eisner and distributed by Getty.

A major departure from Eisner's conception of DBAE and from the materials distributed by Getty occurs in the priority given to production activities. We can recall that in Eisner's version of DBAE and the materials from Getty, production is only one of the four disciplines of the visual arts and, therefore, receives at most only one-fourth of the curriculum time. In this Nebraska experimental program, production activities come first and instruction in art history, criticism and aesthetics grows from the production activities. These ideas about production come from Arts PROPEL. An element of reflection, an important part of Arts PROPEL, has also been added to the Nebraska curriculum.
Assessment in this experimental program is in multiple form and is an ongoing process. The portfolio plays an important role and self-assessment has been added. This kind of assessment is not mentioned by Eisner nor by Getty in their curriculum sampler. Eisner's version of assessment does not include an ongoing process and generally is not in multiple form. Self-assessment is also something new for DBAE. This, too, is a part of the assessment process in Arts PROPEL. Self-assessment is an important part of the student's own experience. Importantly, the portfolio is also a new addition to DBAE. In fact, the materials from Getty say that the portfolio is not suitable for DBAE evaluation (Dobbs, p. 47). While on the surface this program is full of rhetoric from Eisner's DBAE, as it is implemented it becomes much more like Arts PROPEL.

This Nebraska DBAE also addresses a performance objective and assessment. This is something new for DBAE and, like the reflective element, is much more like Arts PROPEL than the DBAE that Eisner proposes or the materials from Getty. According to Wilson, DBAE in this experimental form is gaining rapid popularity and acceptance in the field by art educators as well as students. DBAE may be the name for new arts education programs, but under the rhetoric, much of the content is from Arts PROPEL.

The art education approach from Arts PROPEL attempts to capture as faithfully as possible the practice of an artist, who uses aspects of production, perception, and reflection within the artistic medium (Gardner and Grunbaum, p.
The Nebraska DBAE experiment recognizes the role of the teacher in designing assessment. In Arts PROPEL this role is essential.

Teachers as co-researchers had the responsibility for determining what issues were essential for their specific classes. Students were necessarily involved, because assessment was viewed as a means of illuminating processes for them. Therefore, the fundamental answer to “What do we want to know?” was “Information that can be of value to teachers and students, and that can feed back into the teaching and learning process.” (Project Zero, Harvard Graduate School of Education, p. 27)

The DBAE experiment includes some self-assessment by the students. In Arts PROPEL, the students themselves are actively involved in designing assessment.

An additional source of richness in PROPEL assessment has come from the increasing role of student self-assessment. As PROPEL has stressed students’ ownership of their work and the working process, it has become natural—in fact, necessary—for students to take an active role in assessment. (Project Zero, Harvard Graduate School of Education, pp. 29-30)

Summary

The Nebraska Department of Education makes some interesting comments about national standards. They believe that since the nation’s 50 governors adopted the National Education Goals in 1989 and since those goals are the basis of the Goals 2000: Educate America Act, in effect we already have voluntary national standards. Since we already have voluntary national standards, will mandatory national standards be far behind? It appears that the Getty Institute believes that they are close. The Nebraska Department of Education must also believe they are close. If so, DBAE in some form will be available to use as a model for the art education of the future. In an undated flyer from the Nebraska
National standards were developed to help state and local educators focus on providing the opportunity for all students to learn at high levels. . . . The National Standards for Arts Education help educators think about what students need to know, do and understand in order to solve problems and build meaningful lives in today's world. Frameworks can serve as a guide so that we can meet the challenge of Goals 2000 and enrich life in the future. 

The Getty Institute appears now to support reform efforts in art education that are not necessarily following Eisner's theoretical ideas of DBAE. For instance, Gardner (1990) produced a major piece for Getty titled Art Education and Human Development. In it Gardner writes that it would be reasonable to ask whether Arts PROPEL is a discipline-based arts education. He answers this way:

Inasmuch as there are no explicit guidelines for which programs qualify (or fail to qualify) for this label, the answer to this question calls for a subjective judgment. I prefer simply to view Arts PROPEL as a contemporary effort to create an arts education that encompasses the forms of knowing important in the arts and to do so in a way that fits current knowledge about human development and learning. (Gardner, 1990, pp. 59-60)

Uncharacteristically, Gardner rather sidesteps the answer to this question. After a comparison of the materials from Getty and Eisner's view of DBAE with Arts PROPEL, the answer to the question should undoubtedly be "No." Gardner's Arts PROPEL is a child-centered arts education and quite different from Eisner's DBAE.

One of the major ways in which this experimental DBAE is very different from previous theory offered is in assessment. We can recall, Eisner modified traditional assessment to fit into arts education. On the other hand, Gardner designed
assessment which is based on the art form and which fits the learning that takes place. Gardner specifically says he does not want to "remake traditional achievement testing in which the goal is to find out how much knowledge students have acquired and can recall in response to test questions" (Project Zero, Harvard Graduate School of Education, p. 28). Gardner proposes that all of education adopt his ideas from Arts PROPEL. His concepts culminate in the individual-centered school, using Arts PROPEL as the model for all subjects.

Art education is surely well on the way to major changes. Art production alone does not seem sufficient for a student to know about art. However, when production is considered first, instruction in art history, etc., follows quite naturally. It is a method that is favored by both teachers and students. Traditionally art education curricula are designed with local control. Today, it is curriculum designed locally that is popular with both teachers and students. Modular units, like domain projects, designed in a spiral method, could fit into any curriculum. The units appear to work well and are easy to implement. Ongoing assessment in multiple form is certainly proven to be workable in the classroom by Arts PROPEL and by the experimental DBAE in Nebraska. It is interesting that the new DBAE appears to be based on the Arts PROPEL model.

A movement in art education begun in the late 1950s by Eisner and Bruner has at last captured national interest. As educational psychology has historically pushed for more scientific methods of evaluation and teaching, it is interesting that it is cognitive science that now offers a theory of art education that is child-centered.
rather than discipline-centered. Who is winning this debate between Gardner and Eisner? Even though the name for this experimental program in Nebraska is DBAE, and even though the rhetoric sounds similar to the DBAE that Eisner and Getty promote, it is actually more like Arts PROPEL. The theories from Gardner and Arts PROPEL appear to be winning the debate at this point; certainly the content of an Arts PROPEL program is gaining popularity. Judging from the positive acceptance of the new experiments in the field, art education appears to be headed toward a more child-centered arts curricula, like Arts PROPEL. Cognitive science has had a profound influence on art education and it offers interesting alternatives for education in the arts.

**Topics for Further Research**

There is a subject related to this dissertation that has received little attention. It is what Gardner refers to as *intuitive* learning in the arts. Intuitive learning implies that by *doing* or producing art, some *knowing* takes place. The creative self-expressive methods of teaching the arts appear to have relied almost entirely on intuitive learning. On the other hand, Eisner believes that knowing in the arts is not automatic, implying that without instruction, students cannot *know* about the arts. What exactly is intuitive knowing in the arts and how does it take place? The answer to these questions would be useful in the design of any art education program.

Another topic for further research is Gardner's plan for the individual-centered school, for which Arts PROPEL is the model. If Arts PROPEL is a good
model for art education, would Arts PROPEL be a good model for education in general to consider?

1. This notebook is sectioned but pages are not numbered.
2. This flyer has no date of publication or page numbers.
REFERENCES


