The role of art in diagnosing and remediating exceptional education needs

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THE ROLE OF ART IN
DIAGNOSING AND REMEDIATING
EXCEPTIONAL EDUCATION NEEDS

by
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CHAPTER I

INTRODUCTION

Art forms have historically been used in measuring a student's potential to achieve. Intelligence tests include drawings and other art forms. Classroom instruction of Exceptional Education Needs (EEN) children may, however, be completely divorced from any connection to art instruction.

Fundamental to the development of language as well as math and reading abilities is the ability to form groups, to perceive and represent spatial relationships, and to order. These abilities can be diagnosed by means of norm-referenced tests. An art teacher can also observe these areas of concern in students' daily work. What then is the role of art in diagnosing learning problems and cognitive abilities? Is it possible to use the art medium to remediate weaknesses in visual-motor and perceptual areas? Are there implications for communication between art teachers and exceptional education teachers?

Purpose of the Paper

The purpose of this paper was to explore art as a diagnostic tool to determine exceptionality. Piaget's
theory that the ability to form groups, to perceive and represent spatial relationships and to order as fundamental to language skills, mathematics and reading ability was assumed. This basic theory is at first synthesized for the reader's benefit. Additional historical background and theory are given. Studies attempting to show that art could be used as a method of remediation for the above mentioned abilities are explored. The implications for communication between exceptional education teachers and art teachers are discussed.

Terms

Art--used as the term is found in elementary school curriculum--intended to encompass all activities and experiences in this setting.

Exceptional Education Needs (EEN)--as defined under PL 94-142, this paper considered children with the handicapping conditions of mentally retarded, learning disability, and emotional disturbance. EEN students are in need of intervention in a special education program.

Exceptional child--describes the EEN students as defined above.

Mentally retarded--mental functioning and development at the rate of one-third to one-half that of a normal child.

Learning Disability--behavioral characteristics that interfere with acquisition and use of knowledge; may include
various perceptual and visual-motor deficits and any combination thereof.

_Emotionally Disturbed_—ability to function normally is handicapped by emotional, psychological or behavioral factors.

_Spatial relationships_—the perception of where the body or objects are in space in relation to other given stimuli.

_Ordering_—placement of objects or symbols in logical sequence to form a pattern or relate a story.

**Scope and Limitations**

The scope of this paper was intended to include three major categories of exceptionality—the mentally retarded, learning disabled, and emotionally disturbed. The paper was not limited in time—that is, all research that could be uncovered was considered as it applied to basic theories of instruction and learning.

**Summary**

Chapter I stated the purpose of the paper. Pertinent terms were defined and the scope and limitations of the paper were revealed.
Chapter II summarizes Piaget's theory of the relationships of visual motor tasks to academic achievement in higher levels of learning. It also includes an historical summary for the basis of diagnostic tools utilizing art forms. Studies attempting to show that art could be used as a method of remediation were included.
CHAPTER II

REVIEW OF THE LITERATURE

Basis in Historical Learning Theory

Piaget\(^1\) sees learning as a function of development. His theories are based on a universal order--logic and natural order. Experiences are fundamental to continuous cognitive growth. There are two different aspects of his developmental theory:

\begin{itemize}
  \item biological growth points to all mental processes as continuations of inborn mental processes
  \item second, in the processes of experience--the origin of all acquired characteristics--the organism discovers the separate existence of what he experiences. In other words, experience rather than maturation defines the essence of cognitive development.\(^2\)
\end{itemize}

Nathan Isaacs further explains Piaget's\(^3\) theory:

The starting-point and crux of the child's intellectual growth is \ldots his own action. And action in the most literal, physical sense of the term. From the beginning it is patterns of active behaviour that govern his life. Through these he takes in ever new experiences which become worked into his action-patterns


\(^2\)Ibid.

and continually help to expand their range and scope. It is through actively turning to look or listen, through following and repeating, through exploring by touch and handling and manipulating, through striving to walk, and talk, through dramatic play and the mastery of every sort of new activity and skill, that he goes on all the time both enlarging his world and organizing it. His own physical activity thus enters from the outset into his whole world-scheme and indeed fashions it, supports it and provides the mastery-key to it.

As Bose observes

... a child who is visual-motor handicapped needs to have a better understanding of what it is that he is about to draw. It is not enough that he sees an object. To thoroughly see the object, he must understand it, not only tactually but also abstractly as a concept in time and space.  

This presents a challenge to art teachers to meet particular individual needs. Bose further states:

Art teachers of lower-elementary children should not assume that the relationship of space and time has already been established for a child's art lesson. ... perceptual motor theory of learning disabilities put forth by Kephart suggests that for many children such assumptions cannot be made, because some children have not had the necessary experiences to internalize a comprehensive and consistent scheme of the world. The child may need to manipulate objects to gain information through motor generalizations.


3 Ibid., p. 484.
Young children tend to like art-based activities and the manipulation of the various art media. In the art room, they can feel under no pressure to achieve beyond their own immediate goals. In addition, as Gair has stated:

Art learning is highly integrative by its very nature. The artistic behaviors involved in doing a creative work are holistic and unify all of the senses. The discipline of art, with its structural principles and basic concepts, requires the mind and body to deal directly with the environment. In this way, children use all of their senses to establish a disciplined communication between the self and the world.¹

It is generally accepted as fact that the order of development in drawing is constant. This would appear to be true of children from all socio-economic and cultural backgrounds. It is this constancy of developmental stages that are the basis for Goodenough Draw-a-Man Test, Bender Visual-Motor Gestalt Test, and Lantz Easel Age Scale. Harris² states in agreement with Goodenough that "the way a child makes a drawing of 'a man' reveals what his mind has perceived and conceived about human males and therefore reveals his 'intellectual' or 'conceptual maturity'."³


According to Gesell,\(^1\) vertical markings precede horizontal lines in the sequence of development. A child scribbles first and there is no recognizable form to it. The child is experimenting with the materials involved and is merely enjoying it as a new experience. Before a closed circle or rectangle can be achieved, the child must be able to produce separate lines of whatever specific length he determines. As in the acquisition of other skills, a child develops through a stage of imitation in art. He then develops a schema to represent a man and a schema to represent a house. Here he is drawing the things he knows best through experience and that have great emotional meaning for him. There will be a great deal of repetition of representations that have proven previously successful. Inventiveness is a later stage of development. Until about the age of ten, children prefer to draw the figure of a man to any other single figure.

Gaitskell summarizes a pattern of expression as (1) manipulation of materials; (2) symbolic stage; (3) schematic stage and; (4) realism stage.\(^2\) As children approach adolescence it is generally observed that personality and


past experiences begin to demonstrate influence. The child may be unsure of himself through this time of maturation. Later he may gain confidence and allow artistic abilities to flourish.

It is observed and generally agreed upon that regardless of a child's intelligence level, all children develop through these same stages. It may take longer for slower children to progress through a stage but they will reach the new stage in the same manner as a normal child.

Charles and Margaret Gaitskell\(^1\) conducted a three-year study to determine the role of art with mentally retarded students. Their observations were offered to help teachers use art as an efficient educational medium for children who are slow to learn. It is their opinion that mentally retarded individuals enjoy and profit from art experiences. They felt that they could see merit to art instruction to even sub-trainable mentally retarded.

\(\ldots\) a CA of six years or over, those with I.Q.'s lower than 40 appeared to derive little or no profit from art activities. Those above 40 improved upon their design after considerable practice, while some produced symbols.\(^2\)

The Gaitskells further felt it reasonable to assume that a mentally retarded child who profits from art

\(^1\)Gaitskell, *Art Education for Slow Learners*.

\(^2\)Ibid., p. 9.
activities might undergo desirable changes in his personality as well. They cautioned teachers on the basis of their observations that slow learners give an art teacher a personal challenge for more understanding and more interest in each individual child. Gaitskells felt that children of retarded mental development require motivational techniques preliminary to any expression in art.

As previously stated, the order of development in drawing is generally accepted as being sequential and constant in any given population. Drawing tests, therefore, derive their scores from the number of details included in a specific item and from the accuracy of their placement and proportion. "Intelligence is positively correlated with drawing ability,"¹ as stated by Horovitz-Lark. She further concludes that, "There are generally observable relationships between drawing ability, reading ability, over-all school achievement and intelligence."²

Recent Research

More observations may be made as to the specific facets of intelligence and cognitive abilities. Recent research has attempted to show correlation of art activities to the various facets of learning.

¹Betty Horovitz-Lark, Hilda Lewis and Mark Luca, Understanding Children's Art for Better Teaching (Columbus, Ohio: Merrill Books, 1967), p. 112.

²Ibid., p. 113.
According to Kellogg in Analyzing Children's Art:

It is my judgment that the esthetic mental images that produce child art would be found to reflect an intelligence similar to that needed for learning to read. If the child can learn to see certain Gestalts in art, he is capable of learning language Gestalts. Children naturally want to learn things of their art, but they must be properly motivated to want to learn those of language and then they must be helped to do so. Learning the meanings of art Gestalts and of word Gestalts involves kinds of mental activities which are both similar and different, and both are inseparable aspects of a developing intellect in childhood. Art begins first, so it cannot be ignored without the risk of making serious errors in education.¹

Kellogg also states her opinion that intelligence shown by children's art appears to be related to mathematical reasoning. Significant published studies to prove or disprove this last opinion are lacking. However, fundamental to math reasoning are basic concepts of space, order, and class. Silver² reported on his study to determine if art procedures could be substituted for the use of language in developing the three basic concepts of space, order and class. Experimental art classes were provided for thirty-four language-impaired students. The procedure used three tasks: (1) ability to form groups in drawing from imagination; (2) ability to perceive and represent spatial relationships; and (3) ability to order and conserve in manipulating

¹ Kellogg, Analyzing Children's Art, pp. 189-190.
objects, modeling clay and painting. Graduate students conducted these special art sessions for ten weeks, one hour weekly. Items included in the post-testing included measures of ability to order sequentially, form groups, conserve, and predict spatial relationships. All areas demonstrated significant gains whereas the control group demonstrated no change.

In his summary, Silver writes:

Art techniques can be used to assist learning disabled children in expressing concepts nonverbally through visual-motor channels in spite of impaired functioning in this area. Through the use of cognitively oriented experiences with drawing, modeling and painting, learning disabled children were able to develop the skills needed to bring to their perceptually disoriented world. The variety of media provided tactile and kinesthetic feedback while the nature of the art activities provided practice in the cognitive visual skills of analysis, integration, and synthesis.

The above study revealed that visual-motor weaknesses can be attacked successfully through the use of art activities. The abilities to form groups, to perceive and represent spatial relationships, to order and conserve are fundamental in the development of language as well as in mathematics and reading ability. Silver recommends future investigation into these complex behaviors in relation to art experiences.

1Ibid., p. 423.
Some educators and researchers have attempted to establish a more direct correlation to academic achievement and art experiences. Vautour worked with four third and fourth grade students to encourage improved reading skills through the development of artistic abilities. Booklets were developed with the regular classroom teacher which were directly related to a unit of study in the classroom. Few words were on a page and they were designed so that the child could draw, paint or design in any way he chose. Illustrations, sculptures, etc., demonstrated concepts covered in the booklets. Each child had a learning disability and was having difficulty with reading. A second large factor was introduced in this study in the form of a language master. New vocabulary words were placed on magnetic tape cards. The students used this as an audiodictionary. All students with difficulties in reading used this dictionary and were thus able to complete homework assignments independently. "The illustrations and other devices made by the children resulted in praise and recognition from peer groups." On the basis of the gain in independence in reading and increased peer praise, Vautour saw the correlation to art a positive one.


2 Ibid., p. 94.
Vautour's study is in agreement with the conclusions drawn by Silver\(^1\) in a comprehensive study in 1973. Silver conducted a program through the 1972-1973 school year designed to develop cognitive skills through the use of art.

It was felt that basic reading and mathematical concepts such as order, sequence, spatial relationships, and conservation of liquids and solids could be developed through art experiences.\(^2\)

After one year of instruction and post-testing, Silver was able to conclude in part:

1. art procedures can be useful in teaching ideas of conservation, grouping, ordering, and spatial orientation;
2. art procedures can be useful in evaluating cognitive and visuo-spatial abilities and disabilities.\(^3\)

The GMVR Program (Receptive-Expressive Learning Through Art) was tried and tested by Gair in 1973 and 1975 with different populations of children.\(^4\) The rationale of the program was to fuse perceptual-cognitive needs with art learning behaviors. The children used their visual


\(^{2}\) Ibid., p. 3.

\(^{3}\) Ibid., p. 57.

\(^{4}\) Gair, "Form and Function: Teaching Problem Learners Through Art," p. 9.
expression skills in a variety of art-based activities. The program is proputed to have met the needs of: (1) the normal child or gifted child who is able to function but demonstrates a developmental lag in one or more communication channels; (2) the child whose behaviors indicate a perceptual-motor, cognitive or affective skills deficit; (3) a child who cannot integrate perceptions and is hostile or submissive; (4) the child who is unable to orient his self and environment so as to establish a realistic body image and self-concept; and (5) the child who is emotionally blocked at home and at school. Gair has thus incorporated slow learners, learning disabled and emotionally disturbed students.

Rainey\(^1\) points out in her book that art experiences can be profitable for young students in numerous ways. One purpose of art class is a medium of expression. Later the therapeutic effect of such expression upon the emotionally disturbed will be discussed. A child's own art work has successfully been used as a stimulator for the development of language skills. Known to improve language skills, art can also help a child grow in socialization skills. Rainey also points out that the feeling of accomplishment that follows the completion of an art project contributes

to a positive self-concept on the part of the child. Other specific skills utilized and strengthened in art activities are: development of fine motor coordination and hand dominance; auditory discrimination plays a role as a student listens to and follows specific directions; auditory attention span can be increased as directions become longer and increase in complexity; visual discrimination is strengthened in a variety of ways; some activities are related to visual-motor, figure-ground discrimination, spatial relationships, position in space, and perceptual constancy. The use of basic geometric shapes in art readies a child for the later discrimination of letters and numbers.

Other information can be derived from the observation of children's drawings. A component of artistic endeavors is the ability to produce visual representations of experiences. Visual memory is a factor in this process. Children think in visual images. (This visual thinking diminishes by adolescence and replaced by verbal thinking.) The selectiveness of visual memory as well as degree of its development will be reflected in art work.

Following a two month program with learning disabled children, Sommers¹ reports on a project to improve self-

concepts and body images. The project consisted of building marionettes in sequential steps. The procedure began with a discussion of the children's own body parts and where the respective parts were joined together. It culminated with the wiring together of clay representations of each part into a marionette. As a study, the report is inconclusive but Sommers felt that the students demonstrated a new-found sense of well-being.

It is possible for there to be an emotional satisfaction in drawing. Drawing can also be used as a means of communication. This has been reported as useful in cases of language deficit as well as emotional disturbance.

Art therapy has been used in a number of cases of elective mutism as a supplement to verbal psychotherapy. Landgarten claims to have the only instance of art therapy being used for this purpose in the central role. This particular client withheld speech; art appeared to be another means of communication. The art lessons were flexible to encourage expression and the sessions evolved into picture-making and story-telling. She was thus able to tell the therapist something about herself through a medium that was less frightening to her than speech. The client's basic

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1 Helen Landgarten, "Art Therapy as Primary Mode of Treatment for an Elective Mute," American Journal of Art Therapy (1975):16.
artistic style was reported to have shown maturation over the seven-month period of therapy. Improved integration of her personality was evident at home and at school. No treatment seems pure, however. During the therapy process the girl was given no treats until she verbalized her desire for them. She was introduced to visitors who would then naturally expect her to say a few words. She could have a classmate play with her at recess time if she asked them to join her. Landgarten did conclude "art therapy holds promise as a means of primary treatment in cases of elective mutism."¹

Frame² was acting as a remedial reading tutor for a young LD boy. The subject reportedly had a superior intelligence but had deficits in visual and auditory discrimination and memory and directional confusion. Art work was used as an adjunct to tutoring. The pictures revealed some conflicts the boy was having. These conflicts were then dealt with in a positive manner.

Giving form even to asocial ideas also gives substance to the aggressive child's inner life. It reduces the impact of fluctuating moods and helps to bring formerly elusive fantasies into the realm of the ego. As the


child learns to love art, the activity can become a sanctuary wherein feelings and perceptions otherwise drowned in constant hostilities can be experienced for the first time.¹

The Role of the Art Teacher

Silver² recognized and faced an additional issue. Some art educators object to art being used for therapeutic purposes. These educators feel that any other purpose other than instruction undermines art education. Silver based his project on the assumption that aesthetic and therapeutic goals do not necessarily conflict. With the evidence of his study, Silver states that "Art education can go beyond art per se without neglecting the development of art skills and values."³ He feels that: (1) a teacher or therapist can structure art experiences without sacrificing spontaneity; (2) one can look beyond art to cognitive and emotional goals; and (3) that visual thinking through art can take the place of verbal thinking.

The same kind of art experience can serve diagnostic, therapeutic, esthetic, and cognitive goals. Thus we do


²Rawley Silver, A Study of Cognitive Skills Development Through Art Experiences: An Educational Program for Language and Hearing Impaired and Asphasic Children.

³Ibid., p. 57.
not need to sacrifice one developmental need to another but can simultaneously assist many kinds of growth that, in turn, tend to reinforce one another.¹

The role of the art teacher in the education of exceptional education needs children is discussed in various lights by other researchers. Kramer feels that art materials may be important as a means of training perception, "but teaching is, in the main, directive and creative work becomes at best a distant goal."²

Rainey states

... for some children with developmental problems, pleasant memories must be arranged for in advance. The teacher must teach basic skills which give this child outlets to work creatively ...³

This statement has implications for the amount of individualization that would be required of an elementary school art teacher. This in turn would affect the amount of time required for adequate planning and evaluation.

According to Bose,

In helping learning disabled children, the role of the art teacher has been slighted. Using a little imagination and applying some knowledge, there is much that an art teacher can do for the visual motor handicapped child.⁴

This opinion seems more prevalent among recent researchers than is the negative viewpoint.

¹Ibid., p. 47.
³Rainey, Art for Young Children, p. 1.
Owens feels positively that art has a new role:

Art education is no longer largely oriented towards the teaching of drawing or painting. Its central concern is the sharpening of perception in order for a child to see potentials in materials, to find variety in images, to sense weight, measurement and texture visually—in other words, to see and to transfer visions into new forms.¹

Following his study on the effect of art instruction upon a reading developmental test, Mills concluded:

Children's reading development can be improved through art lessons that stress the inclusion of detail . . . art instruction should include at least some strategies that develop the child's ability to recall and delineate fine details in his environment.


CHAPTER III

SUMMARY AND CONCLUSION

Researchers and educators are in general agreement that art experiences have positive implications for the diagnosing and remediating of some exceptional education needs. Art therapy is a growing new field of education. It is a field founded on the basic principles of learning as historically accepted.

Recent research has, almost without exception, involved relatively small populations. Generalizations for broad application have been made from these samplings. Using these small groups, the programs researched seem to be 100 percent successful. It would be in order to conduct more and broader research. Some of the recent journal articles involve the use of a specific lesson plan or method of reaching exceptional students. It will be interesting to see future reports to confirm or discredit these methods.

Most areas of exceptionality have been covered in recent research. Mentally retarded, learning disabled and emotionally disturbed students have been considered here. Studies have found positive correlations between art and many of the facets of cognitive learning ability. These
have included the ability to order, conserve, perceive and represent spatial relationships. Other specifics are often mentioned or implied but no recent research was found to substantiate these claims. Those areas are visual and auditory memory and visual and auditory discrimination.

Although solid research may still be needed, task analysis will lead the reader to the conclusion that art experiences may easily utilize and strengthen those abilities. This seems to be what educators have been relying upon. That is, in analyzing children's needs, teachers will often times discover that the various skills needing development or strengthening are incorporated in many art activities.

Art experiences can be free of the threat presented to the slow learner by academic tasks. Children slow to express concerns may communicate their needs in their drawings. The very act of drawing can be a therapeutic outlet for a troubled child. Various forms of art expression would seem to play an important role in both diagnosing and remediating exceptional students. It also has implications as a counseling tool if used wisely by a classroom or special education teacher.

This leads to implications for the need for cooperative communication between special education, regular
education, and art teachers. If art teachers are to attempt to meet the individual needs of their students, there may need to be an adjustment made in their planning time and size of classes. Since art therapy is a recent development in teacher training, there may need to be in-service training for those already in the field. The actual role of the art teacher is not consistent. Most importantly, however, is the apparent need for open-minded communication among disciplines with the common goal of more fully meeting the individual needs of students.
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