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A QUESTIONING STRATEGY FOR AESTHETIC SCANNING

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A QUESTIONING STRATEGY FOR AESTHETIC SCANNING

by

Gloria Jean Hewett

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THE UNIVERSITY OF ARIZONA

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ABSTRACT

This paper proposes a questioning strategy for the aesthetic scanning process of pre-criticism used in discipline-based art education. As this approach is implemented at the secondary level, problems resulting from the art criticism component will develop because talk about art is unfamiliar at the secondary level. The problems can be partially alleviated by using the questioning strategy to structure questions for aesthetic scanning to elicit the desired information from students and to extend and develop that information so that students arrive at complete concepts and ideas about works of art and other objects.

CHAPTER 1

INTRODUCTION

This paper strives to address one potential problem during the implementation of discipline-based art instruction at the secondary level. Talk about art can be effective when it promotes the aesthetic understanding of works of art and other objects. "The construction of questions is an important aspect of effective instruction, though it needs to be accompanied by meaningful content and specific sequencing of such content" (Hamblen, 1984a, p. 12). The combination of structured questions and solid content can help to develop art criticism as an integral part of discipline-based art education.

Questions will increase students' verbal participation when interacting with art or other objects. The purpose of questioning is the facilitation of student participation in learning; language becomes a path for learning about visual art rather than an obstacle. The verbalization of thoughts about art or other objects will solidify good ideas that come about as part of the shared talk during class discussions. Ideas will be experienced directly by students who respond to questions and indirectly by students in the class who are listening to others respond.

The purpose of this paper is to develop a questioning strategy specifically for aesthetic scanning. Aesthetic scanning is one of the fundamental elements of discipline-based art education. It is used to

introduce students to observe the features of visual art and to translate their observations into words that describe them.

The originator of aesthetic scanning, Broudy (1972), developed his method some years ago and Greer (1984) adopted it for use in The Getty Institutes for Educators on the Visual Arts. Aesthetic scanning also forms the basis for The Helping Education through Arts Resources for Teachers (HEART) program in Decatur, Illinois, public schools (Getty, 1985).

The questioning strategy presented here is usable with other approaches to art talk besides aesthetic scanning. Sample questions and reactions will be developed to illustrate the proposed strategy. It will be developed as a foundation for teachers to build on individually. The strategy will be flexible; questions and reactions can be arranged and phrased several ways depending on the goals of individual teachers. The questions and reactions presented in the proposed strategy should be considered as a partial selection of possible solutions.

When students are asked to actively participate in scanning a work of art or other object, difficulty arises because students at the secondary level are unfamiliar with the pre-criticism method of aesthetic scanning. Talk about art has not constituted a large portion of secondary art education and art teachers do not adequately know how to elicit the needed information from students (Mittler, 1980) during aesthetic scanning.

The questioning strategy will benefit both teachers and their students during the art criticism process. Teachers will benefit from instructional guidance that will be used during the question and answer

interaction of talk about art or other objects. Students will benefit from increased learning that will result during active, verbal participation.

There are alternative views of art criticism that differ from the structured teaching approach proposed by this paper. One position suggests that discussing art is unnecessary. "It can be argued that one need not think about art to enjoy and appreciate art, and that one who simply responds to art is not in danger of reducing art to fact" (Streb, 1984, p. 159). Although a response to art does not always need a verbal explanation, the education of students requires more than looking without thinking.

The aesthetic scanning process deals with factual visual information that is referenced to a work of art. Scanning also deals with the arrangement of factual information to create mood, atmosphere, meaning, or expression. The discussion of a work of art brings clarity to understanding and allows the sharing of knowledge between people that does not occur during silence. Earle (1980) directly opposes the ideas presented in this paper:

But mere descriptions of the factual components of any phenomenon whatsoever is mere verbalization; and of what interest could that be to anyone who can experience the phenomenon itself? Not that there are not misguided phenomenologists who try to do just this, or for their part critics who in effect do the same. Putting into words what can be vividly seen in itself is a tedious business, to no point in the first place, and impossible in the second (p. 253).

Opposing views are interesting to consider when taking a position on any issue. This paper considers discussing works of art or

other objects as a crucial step in teaching students about art criticism as a component of discipline-based art education.

Some of the terms used in this paper need to be defined.

"Discipline-based art education should produce educated adults who are knowledgeable about art and its production and responsive to the aesthetic properties of works of art and other objects" (Greer, 1984, p. 212). Art criticism, aesthetics, studio art, and art history are the four components of discipline-based art education. A comprehensive view of art as a serious subject of study is achieved through the integration and balance of the four components taught concurrently.

Strategy can be defined as a carefully formulated plan involving a sequence of steps prepared to reach a specific goal. The proposed questioning strategy has three parts: question types, responses, and reaction types (Hyman, 1970). Together, the three parts constitute a framework for constructing a discussion about art or other objects that will develop informed aesthetic responses from students.

Question types refer to different ways of formulating questions about any subject matter. A question will cause students to think in a particular direction. A question has two main purposes: students are encouraged to think before they respond and students are directed to think about something in particular. Responses refer to student answers. Reaction types refer to the follow-up types of verbal exchange that can follow a question: a response, a question, or another reaction.

Aesthetic scanning can be defined according to four property systems that work together to produce an informed aesthetic response

in the viewer (see Appendix A). Sensory properties are the qualities of the work of art or object that can be seen or felt. These are properties concerned with what is directly perceived by the viewer: line, shape, value, texture, color, size, and space.

The formal properties are concerned with the organization of the sensory properties. The viewer scans the work of art or object for the formal arrangement of the properties perceived at the sensory level.

The expressive properties are the qualities of the work of art or object that deal with meaning. The viewer responds to the sensory properties and the way they are organized and speculates about possible meanings. The expressive level defies absolute answers about possible meanings, although the answers must be referenced to the work of art or object.

The technical properties are the qualities of the work of art or object that indicate to the viewer how it was made. These properties deal with the understanding of technical processes used by the artist.

Each of the property systems contribute to the overall understanding of the work of art or object. Aesthetic scanning requires referential adequacy so that comments are referenced directly to the object being discussed. This method provides an objective perspective toward talk about art that occurs in a classroom situation.

There are three assumptions that need to be considered in relation to the problem addressed by this paper: (a) the discipline-based approach is appropriate to teach art at the secondary level, (b) a

questioning strategy is needed to facilitate discussions as part of the discipline-based approach to art education, and (c) secondary art teachers are knowledgeable about the content of works of art that they use during aesthetic scanning.

One limitation of the problem exists because the proposed questioning strategy for aesthetic scanning has not been tested to check its effectiveness for teaching or learning. At a later time, the questioning strategy can be tested with actual subjects to determine whether student achievement in art criticism increases, and whether teachers become better discussion leaders as a result of using a strategy for asking questions within the structure of aesthetic scanning.

A second limitation concerns the widening gap between the terms recitation and discussion. Recitation is the recall of facts using a basic question and answer format. Discussion is a more complex process using a limited number of core questions that require thought and group communication skills. Aesthetic scanning requires a combination of recitation and discussion formats. Discussion and recitation are used interchangeably in this paper because the emphasis is on talk about art, not the differentiation between two terms that are presently being debated.

This paper proposes a questioning strategy for aesthetic scanning to alleviate problems connected with talk about art at the secondary level when the discipline-based approach is implemented. The questioning strategy is also applicable to the elementary level, although the difference in question content will need to be considered

in relationship to grade level. Question types and reaction types are useful for teachers to formulate questions at any level.

The questioning strategy will be used for three different sections of the discipline-based approach: visual analysis, critical analysis of student art work, and critical analysis of exemplary, adult art work. Each of these sections is concerned with talk about art or other objects. The questioning strategy is flexible enough to accommodate the exchange of information within the different sections of the discipline-based approach.

Discipline-based art education aims to educate students so that they become knowledgeable about art and responsive to the aesthetic properties of works of art and other objects. The combination of a questioning strategy to elicit student responses and the component of art criticism will help to reach that goal.

CHAPTER 2

REVIEW OF THE LITERATURE

A search of the literature reveals three areas pertinent to the proposed questioning strategy for aesthetic scanning: research concerning general questioning information and questioning strategies, research covering art criticism methods as part of art education, and the research combining art criticism methods and questioning strategies.

Research on questioning in general education is an extensive and continuing process. Gall (1970) wrote a review of the literature on questioning, concluding that questioning remains a popular and useful tool for educators. She indicated that the educational trend is toward improving teachers' questioning practices rather than a need to continue justifying the importance of questions in the classroom.

In 1984, Gall evaluated the use of questions in the classroom and the effect of questions on student achievement. She discussed the value of recitation as a method of eliciting information from students. Recitation is a popular question and answer process that has recently become a controversial issue. The distinction between recitation and discussion is being debated; however, Gall felt that the present method should be improved rather than changed.

Dillon (1984) wrote a companion article to the Gall (1984) article in which he differentiated discussion from recitation. He found that the two words are used interchangeably even though there are

distinctions. Recitation is the recall of known information and discussion is the development of ideas previously unknown. Dillon advocated a change in the way questions are used to guide a discussion so that discussion and recitation become separate processes.

Hyman (1970) described the relationship between a question, a response, and a reaction. The word question refers to the way a verbal response is elicited. Response refers to the answer used to fulfill the expectation caused by a question. There is a reciprocal interaction between a question and a response; a response is elicited from a question and a question is developed to elicit a response. Reaction refers to the verbal exchange that modifies and rates what was previously said.

The dialogue between students and teacher and between students is based on the relationship between the question, the response, and the reaction. A discussion needs all three of these elements to develop a significant exchange of ideas and information.

Gall (1970) suggested that follow-up questions, referred to as reactions by Hyman (1970), have not been thoroughly researched. Follow-up questions are the ones used after the initial question has been asked. Follow-up questions are needed to improve a weak response, create a discussion atmosphere, create curiosity, and guide problem solving skills. Gall suggested "that follow-up questioning of the student's initial response has substantial impact on student learning in classroom teaching situations" (p. 712).

In 1975, Laurence developed a series of follow-up questions that he labelled reactions. Laurence divided the reactions into five

processes: correct, redirect, rephrase, prompt, and student clarification. He suggested, like Gall (1970), that other interaction besides the initial question is crucial to the development of ideas and concepts.

Sharp (1981) came up with a special form of verbal response developed from theories in language and art. "An aesthetic extension is a statement made by an adult to a child, which is contingent upon a child's previous utterance or artistic production. It builds along aesthetic dimensions and closes with attention on the original utterance or artistic production" (p. 122). The aesthetic extension is a concept similar to the reaction concept that both Gall (1970) and Laurence (1975) were concerned with earlier.

Hensen (1981) explained questioning as a form of guided discovery. The teacher who asks a question is obligated to help the student develop an acceptable answer. This includes allowing students time to think before responding, probing the answer until it is acceptable, and helping the student get started using clues or hints. An exchange between the student and teacher that fails is a result of poor teacher guidance.

In addition to research that deals with how information is elicited from students using recitation, there is a large body of knowledge concerning how questions are categorized according to cognitive and affective levels of thought. Bloom et al. (1956) divided the cognitive domain into six categories: knowledge, comprehension, application, analysis, synthesis, and evaluation. The first category is knowledge and the last category is evaluation. In 1982, Kisko and

Iyortsuun used the same six categories to design questioning categories for developing discussion guidelines.

A second part of the original Bloom et al. (1956) project was the development of the affective domain. The second part was completed by Krathwohl et al. in 1964. They divided the affective domain into five categories: receiving, responding, valuing, organization, and characterization. The categories of the affective and cognitive domain are arranged according to the complexity of thought required for each category. The two domains run parallel to each other, causing an overlap of thought processes between them. Krathwohl et al. acknowledge that a human being responds as a total person; thinking and feeling happen together, not separately.

Hargreaves (1984) discussed the difference between two general question categories: (a) factual, those that require the student to recall information; and (b) interpretive, those that demand an answer involving evaluation, analysis, reasoning, or opinion.

Gall (1984) also defined two basic cognitive levels for classifying teacher questions: fact and higher cognitive. Gall felt that although many systems for classifying teacher questions have been explored, the cognitive levels fall easily into two categories. "Fact questions require students to recall previously presented information, whereas higher cognitive questions require students to engage in independent thinking" (p. 40).

Hyman (1979) classified questions according to three cognitive categories: definitional, empirical, and evaluative. The categories are not arranged in a hierarchy, although they are based on cognitive

processes. Definitional questions ask students for a definition, the answers are either right or wrong. Empirical questions allow students to express their views of the world by asking for inferences, conclusions, comparisons, explanations, generalizations, or facts. Evaluation questions ask students to express and justify opinions and values.

Hyman (1979) also indicated that the types of questions that are formulated are as important as the separation of questions into cognitive categories. Even if questions can be categorized, it is also important that the way the questions are formulated be recognized as valuable when constructing a questioning strategy. Hyman established three question types useful for structuring questions: response clue, information-process, and production. Each of these activities require students to provide information depended on the wording of the question. The categories are flexible, causing an overlap between them.

Hargreaves (1981) discussed the difference between closed questions that have only one answer acceptable to the teacher and open questions with several acceptable answers. Hargreaves has developed a third type of question called a half-open question that calls for a yes or no answer. If the question is answered with a no, then the question becomes closed. If the question is answered with a yes, then the question becomes open because the answer requires elaboration to be complete.

Servey (1974) described two categories of stimuli that affect the student: open and closed. A closed stimulus requires a precise and accurate response, causing reluctant student participation, for example, "what is the meaning of this painting?" An open stimulus

creates an allowance for a larger number of acceptable responses, causing students to participate more willingly. An open question differs from a closed question because it contains a think factor phrase, for example, "what do you think is the meaning of this painting?" Other think factor phrases include: your opinion, do you suppose, do you imagine, can, or might.

In addition to the specific information regarding questioning strategies there is research concerning general suggestions for conducting discussions. Lucking (1975) came up with six general suggestions to improve discussions: using clear language to phrase questions, avoiding the use of questions as an excuse to lecture, wait time, respecting student answers, avoiding questions with obvious answers, and encouragement.

Hamblen (1984a) also made general suggestions for using questions in an art room. Her guidelines are more extensive than those of Lucking (1975), but they also basically concern phrasing questions, respecting students, wait time, and creating an atmosphere conducive to learning. Hamblen suggested seventeen ways to improve classroom questioning, and eight ways to improve responses to student answers.

Other art educators (Szekely, 1982; Taunton, 1983) have written articles concerning talk about art in the classroom. Taunton discussed question classification systems and suggested several ways to respond to student responses. Szekely pointed out two types of talk in the art room: art-related conversation and non-art-related conversation. He explained why discussions about art are important, what to discuss, and when to discuss art with children.

Art criticism as a component of art education is the second area that was investigated for this paper. Several methods of art criticism (Beardsley, 1966; Broudy, 1972; Clements, 1979; Feldman, 1981; Johansen, 1982; Lanier, 1982; Mittler, 1983) were examined as possibilities for combining with a questioning strategy.

Beardsley's (1966) art criticism format is divided into five categories: moral, cognitive, objective, affective, and genetic. The moral category deals with the desirable social effects of a work of art. The cognitive category is concerned with the contribution of knowledge from a work of art. The objective category deals with objective statements made about the aesthetic features of a work of art. The affective category is concerned with statements that deal with the emotional effect of a work of art on the viewer. The genetic category is concerned with statements about the causes and conditions that contribute to a work of art.

Feldman (1981) identified four stages of art criticism: description, formal analysis, interpretation, and evaluation. Description is defined as describing what is immediately noticeable to the viewer. In formal analysis, the viewer explains connections between the described elements. Interpretation refers to finding meaning expressed by the work of art. Evaluation refers to ranking of works of art using criteria.

Clements (1979) advocated the scientific inductive method for teaching the art criticism process. The inductive method has three steps: analyze, hypothesize, and confirm. These three steps resemble the first three stages of Feldman's (1981) art criticism format.

Clements, however, felt the inductive method functions better as a model for art criticism because it respects personal sensibility, develops the hypothesis in a natural way, and provides a way to test the hypothesis. "The inductive method of teaching visual art criticism strips art criticism of its mystique and ephemerality in order to make clear its vital and abiding role in intellectual development" (p. 77).

Mittler (1983) described a perceptual-evaluative process that students often use when looking at a work of art. Mittler suggested ways that teachers might improve this process so that students make more knowledgeable and discriminate responses. Concepts of perception and attitude were used to develop categorization and evaluative abilities. The approach suggested by Mittler involves six operations: (a) perceptual categories are expanded, (b) category specifications are learned, (c) a search strategy is learned, (d) cues in the art work are matched to category specifications, (3) decisions are formulated in reference to knowledge gained from cue search activities, and (f) decisions are checked against outside sources.

Johansen (1982) developed a dialogue process in which the art teacher guides students when responding to works of art. His process has three stages: impression, expression, and commitment. The aim of the impression stage is to increase the ability of the student to grasp an initial pervasive quality from the work of art. The aim of the expressive stage is to develop the ability of the student to understand parts and relations. The aim of the commitment stage is to make contemplation objective and sophisticated when regarding the overall expression.

Lanier (1982) developed a system for understanding the way we look at and respond to works of art and other objects. His system has nine screens that filter the negotiation between the viewer and the work of art: (a) other peoples' general comments about art and specific comments about particular works of art, (b) the setting, (c) how the viewer has learned to see, (d) the viewer's knowledge of symbols, (f) the influence of the viewer's memory stores, (g) the viewer's knowledge of art history, (h) how the viewer judges the work of art, and (i) the relationship of the work of art to the viewer's personal life. The screens are not sequenced and the negotiation occurs through the screens in varying degrees.

The screens are beneficial for understanding what happens from the viewer's side of the negotiation process. The screens can be used by the teacher when the emphasis is focused on the viewer and what is happening to the viewer as art works or other objects are examined.

Each of the preceding art criticism processes are beneficial for teachers to learn and study, but they do not adequately suit the purpose of this paper. Pre-criticism is needed to increase the level of familiarity with art talk and specific art works. Aesthetic scanning is a pre-criticism process that deals with four property levels, one at a time. After students develop their abilities of pre-criticism, then another look at the art criticism processes reviewed in this paper should be considered to determine which process would be best suited for individual teachers. That decision, however, is beyond the scope of this paper.

Broudy (1972) provided the philosophy and background for the aesthetic scanning process (see Appendix A). "... we are speaking about the cultivation of the pupil's receptivity to expressiveness via metaphor. This expressiveness is achieved by giving form to a sensory content, creating a surface on which meaning and value import are presented directly for imaginative perception" (p. 43). Broudy used four property systems to develop an informed aesthetic response: sensory, formal, expressive, and technical. Silverman (1981) explained how Broudy's stages are applied by using aesthetic scanning to discuss several works of art.

The work of Monroe (1941) supports Broudy's (1972) aesthetic scanning process. He wrote that

... a work of art consists of certain stimuli to sensory experience and also to association and interpretation on the basis of memory and past experience. A work of visual art, like a painting, stimulates visual responses, such as those of shape, color, lightness, and darkness. It presents some visual images directly to the eyes. In addition, it has the power to suggest other images and concepts to a brain that has been conditioned through experience and education. Thus a painting can be analyzed into certain presented factors (the shapes and colors that are directly visible) and certain suggested factors (the other objects and events, such as trees, persons, battles, that it tends to call up in imagination; and also, in some cases, more abstract conceptions, such as moral ideals and religious doctrines) (p. 352).

The last section of the literature review concerns the combination of art criticism methods with questioning strategies. This idea, although not new, has not been fully developed. In 1966, Monroe devised a questionnaire to use as a checklist when analyzing art formally. The questionnaire consists of a series of questions to be read through and answered when looking at a work of art. The goal is a systematic

analysis of form, although the prescribed sequence of questions can be altered for the specific work of art being studied.

Monroe (1966) explained how the beginner will need to follow the sequence of questions carefully, treating each question with equal importance. As the beginner learns more about the process, then some questions can be stressed more heavily than others. The goal is to look at a work of art from several viewpoints to try and find all of its important qualities.

Armstrong and Armstrong (1977) devised an art teacher questioning strategy based on studio production. Their goal was to provide art education, promote intellectual development, and enhance students' self concept with art experiences. They divided their strategy into five categories: other, rhetorical, informational, leading, and synthesizing.

The first two categories concern classroom management questions and lecturing in question form. The informational category asks for recall or observation of bits of information. The leading category asks for the relationship between bits of information; the unification of bits of information creates concepts. The synthesizing category asks questions that require students to relate concepts to form an idea or generalization.

Armstrong and Armstrong (1977) provided a table that is arranged in three columns: question types, expected student responses, and sample questions. The strategy is based on the relationship of cognitive categories to studio experience and knowledge. Although the

strategy is useful for art production, it is not directly applicable to art criticism.

Cognitive levels of thought (Bloom et al., 1956) have been used to develop questioning strategies in different subject areas. In 1983, Otto and Schuck combined the Bloom et al. categories with a science model to develop a questioning strategy to effectively teach science to junior high school students. Their goal was to test the effect of questions on student achievement in science.

Hamblen (1984b) established a rationale and theoretical base for an art criticism model that implemented a questioning strategy. Hamblen combined the cognitive categories of Bloom et al. (1956) with Feldman's (1981) art criticism stages. Hamblen described the relationship between the categories and stages as cognitively parallel. Sample questions that illustrate her strategy are presented in her article. Hamblen demonstrated that a combination could be devised; however, this paper emphasizes the ambiguity of cognitive levels and the benefit of pre-criticism over the Feldman process.

The review of the literature summarizes the need for a questioning strategy that is designed to help students look at and talk about works of art and other objects. Several art educators (Hamblen, 1984a; Szekely, 1982; Taunton, 1983) have indicated the need for improved questioning procedures for talk about art, and Hamblen (1984b) has devised a strategy. This paper, however, proposes an alternative strategy based on Broudy's (1972) aesthetic scanning and a combination of several questioning procedures from general education (Hyman, 1970, 1979; Laurence, 1975).

Aesthetic scanning (Broudy, 1972) is effective because it is a pre-criticism process that engages students in talk about art that is referenced to the actual art work. It suspends judgment until a later time when students have the knowledge structures needed to begin aesthetic criticism. Scanning is based on property levels that students can understand whether they are elementary or secondary students. The levels are specific and work together in a unified way to produce an aesthetic response from students.

CHAPTER 3

THE QUESTIONING STRATEGY

The development of the questioning strategy was a process of combining information from several sources discovered during a review of the literature. The explanation of the questioning strategy is divided into four parts: (a) the question, response, and reaction framework, (b) aesthetic scanning, (c) the correlation between the basic framework and aesthetic scanning, and (d) general guidelines for conducting a discussion.

The questioning strategy is set up as a grid with a horizontal and vertical axis (see Appendix B). The question, response, and reaction framework is set up on the horizontal axis and aesthetic scanning is set up on the vertical axis. Each question type and reaction type is defined for clarity. Sample questions and reactions are referenced to a specific work of art (see Appendix C).

The basic framework for conducting a discussion revolves around question types, responses, and reaction types. This framework accounts for the interplay of words between students and teachers and between students. The goal of the framework is to create in-depth talk rather than simple question and answer interactions. This is achieved by including a reaction section for follow-up types of verbal exchange, in addition to the generally accepted sections of questions and responses.

Question types are concerned with the questions the teacher asks students to answer. There are three basic question types, each

directed toward eliciting different responses. The question types serve as a way of formulating questions, not as a strict guideline for the sequencing of questions.

The strategy follows a general hierarchy of difficulty in the arrangement of the three categories and in the arrangement of divisions within each of those categories. The response clue category, located at the top of the strategy, is the least difficult, and the production category, located at the bottom of the strategy, is the most difficult. The information-process category falls somewhere in the middle. Within each of the three categories, the top division is more difficult than the bottom division, creating a general range of difficulty in the middle. For example, in the response clue category, a leading question is less difficult to answer than a wh-word question.

The teacher can select question types that will elicit the right type of student responses. The teacher has the option of choosing all or some of the question types; the decision to incorporate and sequence the question types depends on the individual teacher.

The first division of the question types is called response clue. Response clue includes wh-words, parallel terms, cited terms, excluded terms, and leading. The response clue section provides clues within the questions for students to use in constructing their answers.

Wh-words such as how, when, why, what, and who clue students to respond in terms of number, people, time, and reasons. Parallel terms indicate to the student that the response is similar to a previous response. Parallel terms ask students to respond with more information from what is already available by using such words as "another," "else,"

and "anymore." The context of the interaction will give these vague words meaning, for example, "can you describe another color?"

Cited term questions offer a framework for responses by including a specific descriptor in the question such as: "in terms of shape, can you explain the contrast in this painting?" Excluded terms tell students what not to include in their responses, for example, "besides color, what else works to unify this painting?" Leading questions lead students to agree or disagree with the question, for example, "the red and green contrast sharply, don't they?"

The second division of question types is labelled information-process activity. There are three different processes under this heading: yes or no, selection, and construction. Each process will elicit a different response from students.

The yes or no activity asks for a direct yes or no answer from students. This type of question is called a half-open question because it becomes closed if answered "no" and open if answered "yes" (Hargreaves, 1981). A yes answer can be extended and developed with the guidance of the teacher.

The selection activity offers alternative answers within the question itself for students to choose from. This type of question narrows available choices for the students, for example, "is the organic shape large, small, or tiny compared to the geometric shape?" The selection activity also encompasses a type of activity called visual opposites or polar opposites (see Appendix D). Words that are visually opposite have been correlated specifically for aesthetic scanning.

Selection activity questions are often used at the beginning of a discussion to get students involved. The questions limit choices to produce short, simple student responses so that many students are involved in a short amount of class time. Polar opposites have been used effectively during aesthetic scanning at the elementary level and can be used at the secondary level as well. As secondary students become better at discussing works of art and other objects, the need for simple, selection type questions may dissipate, but for the purpose of this paper, they are still needed.

The construction activity requires students to construct their own responses, such as "how would you explain your position on political art?" The process is open because no hints or clues are included in the question; students are required to construct a complete answer on their own.

There is a place in the classroom for each of these three types of information-process activity questions. Some students who can answer a selection question or a yes or no question will have difficulty answering a construction question. The teacher knows which students can be involved using which type of question, therefore, all of the choices needed to include students are part of the strategy.

The third division of question types is called production. There are two types of production questions: productive and reproductive. Productive questions ask students to produce their own information without relying on past knowledge. Reproduction questions ask students to reproduce an answer from information acquired earlier. The difference between productive and reproductive questions is not

apparent except when referenced to an actual teacher who knows whether or not the information is new or recalled from an earlier lesson.

The question types overlap in many places. Some of the questions ask for the same type of response. The question types are useful for formulating questions that will elicit specific responses from students. The variety of question types allow teachers a chance to discriminate between the abilities of their students. Variety can be used to achieve greater overall participation among students.

The part of the questioning strategy concerned with responses is removed. The strategy is designed to offer a framework, not a specific set of questions and probable answers. Students and teachers are not predictable to the extent that specific responses can be developed for specific questions. Specificity limits spontaneity within evolving classroom situations. The strength of the strategy, therefore, lies in the reaction section because it is designed to handle many different responses.

The reaction section is responsible for poorly phrased questions, unclear questions, unsure students, and correct responses. A reaction can follow a question, a response, or another reaction. A reaction constitutes almost any verbal exchange that takes place in the classroom other than an initial question or response. The purpose for developing a reaction section as part of the questioning strategy is to encourage guided discovery.

Guided discovery is an evolving process of learning because the student is guided by a series of steps, small or large, until they discover a relationship or concept (Henson, 1981). A question is used to

elicit a response and the reactions are then used to guide, probe, re-direct, or clarify the initial response until a strong response has been constructed (Gall, 1970; Hyman, 1970; Laurence, 1975; Sharp, 1981). Guided discovery is dependent on a good teacher; failure is the result of poor teacher guidance.

There are six reaction clue divisions: correct, redirect, rephrase, prompt, clarification, and elaborate. The reaction clues are the same for each aesthetic scanning property system; sample reactions are listed to show variety within each reaction clue division (see Appendix B).

The division labelled correct constitutes a positive reaction to a correct student response. Students should be rewarded immediately after they give a correct response. The reaction labelled redirect can be used when an answer is correct and the teacher wants to direct the same question to other students. The wording of the question is not changed, even though more than one student responds with an appropriate answer.

The reaction clue labelled rephrase has several purposes. The teacher can use this reaction before the initial question has been answered because it was unclear from the start, for example, "the wording of my question is vague. Let me ask the question in another way." Teachers should admit mistakes rather than confusing students with poorly phrased questions.

A second way to use the rephrase reaction clue is to rephrase a question because the student misunderstood the question and answered incorrectly. The rephrase reaction clue can also be used by the

student to rephrase a question using their own words to discover whether or not they understood the question before answering.

Prompting is the reaction clue used when a student is unsure and needs help starting, when the student has started answering and feels hesitant continuing, and when an answer is wrong or inappropriate. The reaction clue labelled clarification is used to clarify a student's response. This reaction clue may be used several times before the student has clarified an answer enough so that others in the classroom also understand, for example, "can you add to your answer?"

The reaction clue labelled elaborate is used when a student answers with a simple, short answer that can be elaborated or extended. At times, the short answer is appropriate and at other times the teacher will ask for a more lengthy explanation after the short answer.

The reaction clues are important to a discussion because they are used to expand ideas and responses. Art criticism requires factual answers and answers requiring higher cognitive thought. Both recitation and discussion are used by the teacher to develop independent thinking based on factual information referenced to the work of art or other object.

Cognitive levels are not indicated on the questioning strategy (see Appendix B). The four aesthetic scanning properties call for different levels of thought, although there are no clear dividing lines between the cognitive categories needed for specific scanning properties. There are two cognitive categories that are part of the underlying theory of the questioning strategy: fact and higher cognitive (Gall, 1984).

The sensory properties are equated with the cognitive category of fact. Fact questions ask students to recall previously presented information or information found directly in the work of art. Sensory properties ask students to describe the character of the qualities that can be seen or felt such as: shape, line, value, space, texture, color, and size.

The formal properties are concerned with the formal analysis of the sensory properties. This property system deals with the factual information gathered during the sensory property stage and the organization of that information. The formal properties are equated with both cognitive categories because both facts and the relationship between facts are required. An overlap of the two cognitive categories is needed because there is no clear division of cognitive thought during the formal property stage.

The expressive property stage asks students to reflect upon the sensory properties and their organization and then speculate on possible meanings. The responses from students are referenced to the art work, although connections and relationships are formed by the students. This property system asks for higher cognitive thought. Students are asked to engage in independent thinking that is referenced to the art work being discussed.

The technical property stage asks students to decide how the work of art or object was technically put together. This property system requires both factual and higher cognitive thought because the student will need to analyze and reconstruct the artistic process.

Each of the property systems uses the same questioning strategy as a framework (see Appendix B). For example, a selection question is constructed the same way for each property system: (a) sensory properties, "are the lines soft or sharp?"; (b) formal properties, "is the composition simple or complex?"; (c) expressive properties, "is the dragonfly a positive or negative symbol?"; and (d) technical properties, "is this drawing textured or smooth?"

The construction of question types and reaction types remains consistent throughout all of the sample questions for each property system. The variance deals with the specific information elicited by the question; the information required to answer a sensory property question is directed at the sensory properties, whereas the information required to answer a technical property question is directed at how the image is made.

The strategy offers numerous options for asking questions and reacting to questions and responses. The teacher will need to choose an appropriate sequence of questions and reactions correlated to the goals they wish to reach when responding to art or other objects with their students.

In addition to the questioning strategy, there are several guidelines for holding discussions that teachers should be aware of:

1. Phrase questions carefully using words students understand. Avoid run-on and unclear sentences; think before speaking. Set an example by waiting to ask a question to demonstrate that thought is needed to ask good questions.

2. Allow students to answer the questions. Do not answer your own questions because the questions become an excuse to lecture.

3. After asking a question, pause for at least three seconds to allow students time to respond. Questions that ask for independent thinking require time for students to think before answering.

It is also important to wait for three seconds after a student response before asking another question or reacting because the wait time demonstrates the importance of the student's response and sets an example of respect toward other people. Student answers are as valuable as teacher questions, otherwise questioning is a waste of time.

4. Avoid questions with obvious answers. Do not insult the intelligence of your students.

5. Never ridicule incorrect, inappropriate, or unusual answers. Use the reaction clues to redirect or clarify student answers. Do not sanction wrong answers because students will not bother to think hard if obviously wrong answers are allowed.

6. Do not repeat student answers. Students participating in a discussion should be taught to respect other students by listening to their answers.

7. Encourage total student participation. Several students can answer a given question to indicate that many questions have multiple or varying answers. Involve less verbal students by using questions that are narrow in focus and require shorter answers, then prompt those same students for extensions of their answers.

8. Be careful not to play guessing games with students. It is detrimental to have students guess what the teacher is thinking. This

guessing game rejects thinking and promotes guessing. It shows that the teacher values personal ideas and not those of the students.

The questioning strategy is a tool designed to improve classroom discussion during art criticism interactions. The basic framework is a combination of ideas and strategies from several researchers to create a strong, unified approach to questioning. The framework is designed to compliment the process of aesthetic scanning (Broudy, 1972).

The general suggestions are an accumulation of suggestions found from several sources. These suggestions are listed to promote an awareness of the need for discussion rules in addition to the structured strategy.

The questioning strategy can be used during three parts of a discipline-based approach to art: visual analysis, analysis of student art work, and the analysis of exemplary master art work. Each of these areas require a discussion format that benefits from the questioning strategy.

CHAPTER 4

IMPLEMENTING THE QUESTIONING STRATEGY IN THE CLASSROOM

Discipline-based art education is an approach to art that is used at the elementary level. As the discipline-based approach to art gains acceptance, it will also be used at the secondary level. Art criticism is one component of discipline-based art education that is a new addition to the existing approaches to secondary art education. This component is difficult to teach because it requires a method of teaching different from the familiar method of demonstration used in a studio based approach.

Art teachers readily understand the technique of demonstration because it is a fundamental part of studio practice. The education of art teachers includes a dominant amount of studio activity, and becomes the easiest teaching style to emulate. In contrast, the technique of discussion is alien to many secondary art teachers. The questioning strategy can alleviate some of the problems that will be encountered by teachers attempting to teach the component of art criticism as part of the discipline-based approach.

The questioning strategy was used to develop a series of questions for each of the four property systems of aesthetic scanning referenced to a specific work of art. The sample questions illustrate how questions can be developed from the questioning strategy in relationship to any work of art or object. The questions that were developed

are examples for understanding the questioning strategy, not as a structure for discussing only the specific work of art referenced in this paper.

The reaction clue division of the questioning strategy was used to develop sample reactions to accompany each of the aesthetic scanning property systems. Reactions are concerned with the development of student thoughts, therefore, the same ones can be used throughout an aesthetic scanning process. For example, the reaction type labelled correct can be used for sensory, formal, expressive, and technical properties when students answer a question correctly. There are several different expressions indicating positive approval, such as: right, good, great, yes, and fine. The reactions serve as examples; individual teachers can develop more extensive selections to reflect personal style.

Talk about art needs to be structured at this time because art talk has been spurious in the past and the discipline-based approach demonstrates the necessity of informed talk about art if art is to be viewed as a serious subject of study. The art teacher can plan for the understanding to be gained from art work by structuring the kinds of questions asked about the work of art.

Forming questions during a discussion is difficult because it requires planning the outcome of the discussion and planning the sequence of questions needed to reach that outcome, in addition to controlling group interaction and spontaneously reacting to the exchange of ideas. The questioning strategy helps to promote the need for a

series of prepared questions to be used as a reference during discussion.

The questions that are developed do not need to be followed methodically, but they will help to structure any talk about art. Individual questions are needed but the impact of a cohesive whole is derived from the combination and arrangement of questions, not the sporadic influx of unconnected questions. The connection, however, needs to be made before the discussion begins.

The teacher is the leader of discussion because art criticism will be taught to relatively naive secondary students when confronted with art as a serious subject of study. The teacher will need to assume the role of discussion leader until later on when discussion can be led by different people within the classroom. The questioning strategy can help the art teacher or discussion leader to prevent poor, last minute questions.

Questions prepared by the teacher will become core questions, and reactions and responses during the discussion will elicit additional, unplanned questions. The questioning strategy will not stifle new ideas and questions as they arise spontaneously, but it will curb unstructured talk that does not have a specific application or relevancy. The teacher constantly monitors the classroom situation to gear the interaction to the forces of the immediate situation.

There are times when a questioning strategy will be unsuccessful, regardless of careful planning. When the teacher notices a significant lack of student responses, several alternatives can be considered: (a) the teacher can provide more information using a

lecture format, (b) the teacher can assign reading homework so that students will be better prepared to answer questions, and (c) the teacher can break students into small groups to answer specific questions as a group. Art teachers can decide when a question and answer format is appropriate, therefore, problems concerning unsuccessful discussions should be infrequent.

Art teachers can use the questioning strategy as a guideline to develop questions that elicit information from students. Art teachers can still perform as individual and unique teachers by developing concepts or relationships they feel are important to their programs by changing the information the questions evoke.

The questioning strategy can be used by teachers who advocate a discipline-based approach to art, as well as teachers who teach only some of the components of discipline-based art. It is geared toward any talk about art that develops in a classroom situation concerning aesthetic scanning.

The questioning strategy can be used for three specific parts of the discipline-based SWRL Elementary Art Program (1982). It can be used during Visual Analysis, Critical Analysis of student art work, and Critical Analysis of exemplar, adult art work.

The Visual Analysis filmstrips show objects in the environment that can be used as subject matter for student art work. The Visual Analysis guides that accompany each filmstrip point out characteristic features and relationships in the objects. The questioning strategy can be used to turn these statements into questions so that students will recognize and discuss the desired information. In this way, a

lecture format can become a discussion format that encourages student input.

The Critical Analysis filmstrips provide art works for students to describe, interpret, and evaluate. The questioning strategy can be used here to elicit information from the students concerning description, interpretation, and evaluation. Each filmstrip is accompanied by image analysis statements that can be asked as questions, encouraging students to provide the needed information.

The questioning strategy can also be used to structure talk about student art work. Aesthetic scanning is used to discuss the work produced by students. The questioning strategy can be used to develop questions that ask for specific information about students' art work. The relationship between student art work and the adult art work shown in the Critical Analysis filmstrips can be developed using questions.

All three areas of the SWRL Elementary Art Program (1982) can be used in conjunction with the questioning strategy to promote greater student participation. Discussion is not always the best option for teaching students, but it is an alternative method of teaching that should be considered. The questioning strategy is structured so that it can be implemented whenever the teacher feels it would be appropriate.

The questioning strategy is applicable to the elementary level in the same way as the aesthetic scanning process. The content will change according to the background art knowledge of students and their grade level; however, determining appropriate content complexity will rest with specific art teachers within particular situations.

The questioning strategy is specifically designed for teaching pre-criticism, but aesthetic scanning also works to develop an understanding of real art criticism. Art criticism can be dealt with at the secondary level once students acquire a strong background knowledge of art history. Art criticism is the judgment and evaluation of art works within a historical context in which works of art are compared according to style, period, school, and culture.

Aesthetic scanning can also be expanded to include the area of value and import. This is a more difficult process that builds on the four property systems of aesthetic scanning. Students can learn to discuss the value of works of art by comparing art works to each other and discussing quality, significance, and truth.

Students at the secondary level can also understand the background and philosophy of aesthetics. This idea, though, requires, further investigation. The language and background of aesthetics can be related to all the components of discipline-based art education by extending the aesthetic scanning process. The components of art criticism, art history, studio art, and aesthetics can be integrated to form a comprehensive view of art.

Aesthetic scanning is limited by the ability of the individual teacher. A teacher with a solid understanding of art will be capable of providing richer experiences for students than a teacher whose art knowledge is limited. Aesthetic scanning, however, functions as a starting point for talk about art or other objects; no matter how extensive or how limited the background of the teacher, aesthetic scanning is always a workable and useful process.

Art can be taught seriously and effectively to secondary students. Questions will develop an ability to critically examine art and other objects to discover expression and meaning. Reactions will build the initial responses and ideas to create well thought out concepts and relationships. Together, the questioning strategy and aesthetic scanning will increase opportunities for informed aesthetic responses in the classroom.

The questioning strategy exists apart from any curriculum so that it can be used as a tool, rather than as a prescription for a specific curriculum. Art teachers can modify, amend, change, and rearrange the strategy to fit specific goals. The strategy is a teaching aid for teachers, not a complete solution to problems concerned with talk about art. A questioning strategy attached to every lesson would become too limiting and definitive. The questioning strategy allows enough structure for developing concepts through question and answer methods, with the flexibility needed to encourage the individual abilities of all teachers.

APPENDIX A

VISUAL SCANNING DIAGRAM

MAKING AN INFORMED AESTHETIC RESPONSE

First, carefully look and/or listen, note what actually exists within an object or event, and then identify as completely as possible the character of its

SENSORY PROPERTIES (qualities which can be seen, felt or heard)

In art, identify the nature of elements such as shapes (square-round), lines (thick-thin), values (dark-light), textures (coarse-smooth), colors (bright-dull), size (large-small), space (deep-shallow), etc.

In dance, observe body gestures (curved-angular), movements (fast-slow), space (open-contained), etc.

In drama, observe elements such as vocal qualities (cadence, quiet-shrill), body movement (fast-slow), costumes and sets (sober-bold, realistic-abstract), etc.

In music, identify the nature of aural qualities such as pitch (high-low), tempo (fast-slow), duration (long-short), dynamics (loud-soft), etc.

Second, respond to ways in which sensory properties are organized within an object or event by identifying the character of its

FORMAL PROPERTIES (try to answer the following questions as the work is experienced)

To what extent is each element necessary? What is the nature of the movement (real or imagined) from one part to another thereby contributing to a sense of evolution and unity? How is the sense of unity maintained even though elements may vary, achieving unity through variety?

Are there some elements which are more dominant than others, a hierarchy of elements? Which elements appear to be most dominant thereby contributing to the major theme? How is variety achieved in the repetition of these elements which results in thematic variation?

How is equilibrium maintained between and among both similar and diverse parts which results in a sense of balance? What rhythmical qualities are created when mode of balance and thematic variation are combined.

Third, reflect upon both the nature of the existing sensory properties and the ways they appear to be organized and then speculate about the possible meanings of an object or event by identifying its

EXPRESSIVE PROPERTIES

Aesthetic objects and events possess presentational (faces, trees, environmental sounds, familiar movements, etc.) and/or metaphorical-symbolic characteristics which evoke responses from one's storehouse of images and, when combined with sensory and formal properties, translate into pervasive qualities such as:

Mood Language - nuances of feeling describable in terms such as somber, menacing, frivolous, etc.

Dynamic States - arousing a sense of tension, conflict, relaxation, etc.

Idea and Ideal Language - interpretations of social or psychological events and beliefs, and/or expressions of courage, wisdom, etc.

Finally, one can also be attracted to an object or event and attempt to identify how it was created because of the significance of its

TECHNICAL PROPERTIES

Attending to the extraordinary surface texture created by an impasto application of paint or the richly patterned sounds produced by the pizzicato plucking of violin strings are examples of reacting to the technical aspects of art forms. Knowing how something is made is often important to aesthetic perception, however, aesthetic responses and judgments can be made without such awareness if other properties are considered.

APPENDIX B

THE QUESTIONING STRATEGY

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Definitions			Aesthetic Scanning Sensory, Formal, Expressive, and Technical Properties
Question Types	Response Clue	Leading	Questions that lead students to agree or disagree.
		Parallel Terms	Questions that ask students to give more information about the same topic.
		Cited Terms	Questions that have a framework for the response.
		Excluded Terms	Questions that tell students what not to include in their responses.
		Wh-words	Questions that clue students to answer in terms of time, reasons, people, and number.
	Information-Process	Yes/No	Questions that ask students to answer either yes or no.
		Selection	Questions that ask students to choose from two or more given alternatives.
		Construction	Questions that ask students to construct their own responses.
	Production	Productive	Questions that ask students to produce their own information.
		Reproductive	Questions that ask students to reproduce information obtained earlier from the teacher or a book.

Definitions of Question Types

Definitions		Aesthetic Scanning Sensory, Formal, Expressive, and Technical Properties
Reaction Types	Correct	Reactions that provide positive reinforcement for correct answers.
	Redirect	Reactions that direct the same question to other students after the first has responded appropriately.
	Rephrase	Reactions that reword an unsatisfactory initial question to clarify its meaning.
	Prompt	Reactions that employ clues or hints to help students with weak, incomplete, or incorrect answers.
	Clarification	Reactions used to amplify partially acceptable answers.
	Elaborate	Reactions used to extend yes/no answers and other short answers.

Definitions of Reaction Types

Sample Questions			Aesthetic Scanning: Sensory Properties
Question Types	Response Clue	Leading	This is a black and white image, isn't it?
		Parallel Terms	Are there any more?
		Cited Terms	In terms of line, how would you describe this drawing?
		Excluded Terms	Besides line, how would you describe this drawing?
		Wh-words	How would you describe the range of value between black and white?
	Information-Process	Yes/No	Does this drawing have texture?
		Selection	Are the lines soft or sharp?
		Construction	What shapes can be found in this drawing?
	Production	Productive	How would you describe the space in this drawing?
		Reproductive	What does texture mean?

Sample Questions			Aesthetic Scanning: Formal Properties
Question Types	Response Clue	Leading	This would be considered a soft image, wouldn't it?
		Parallel Terms	Are there any other forms used for balance?
		Cited Terms	In terms of value, what is the range from black to white?
		Excluded Terms	Other than through organic forms, how does the viewer's eye move around the image?
		Wh-words	How is the image balanced?
	Information-Process	Yes/No	Is the background unified to the foreground?
		Selection	Is the composition simple or complex?
		Construction	How are the forms arranged?
	Production	Productive	How does the shading affect the organic shapes?
		Reproductive	How is this drawing similar to other Derickson images?

Sample Questions			Aesthetic Scanning: Expressive Properties
Question Types	Response Clue	Leading	This dragonfly is exaggerated in size, isn't it?
		Parallel Terms	Can anyone tell me another reason for drawing a dragonfly larger than life?
		Cited Terms	In terms of value, what feeling does the image capture?
		Excluded Terms	Other than an interest in nature, why might an artist draw insects?
		Wh-words	How does the partial dragonfly affect the impact of this image?
	Information-Process	Yes/No	Would you find a different meaning for this image if you were afraid of flying insects?
		Selection	Is the dragonfly a positive or negative symbol?
		Construction	How does this image make you feel toward nature?
	Production	Productive	How would you explain the meaning of this image using the information discussed so far?
		Reproductive	What other works of art make you feel the same way as this one?

Sample Questions			Aesthetic Scanning: Technical Properties
Question Types	Response Clue	Leading	You can tell this is a pencil drawing, can't you?
		Parallel Terms	Anyone else?
		Cited Terms	In terms of soft and hard lead, how are deeper blacks obtained?
		Excluded Terms	Other than lead, what other ways are used to obtain darker values?
		Wh-words	How was texture achieved in the lower portion of the drawing?
	Information-Process	Yes/No	Does this drawing use any tools other than the pencil?
		Selection	Is this drawing textured or smooth?
		Construction	Can you explain how this drawing was made?
	Production	Productive	How did the artist create the texture on the large, circular shape?
		Reproductive	What can you tell me about the history of the technique of pencil drawing?

Sample Reactions		Aesthetic Scanning Sensory, Formal, Expressive, and Technical Properties
Reaction Types	Correct	<ol style="list-style-type: none"> 1. Right. 2. Good answer. 3. You've got it. 4. Great.
	Redirect	<ol style="list-style-type: none"> 1. Does anyone else have a comment? 2. Right. Would anyone else like to add to that answer? 3. Anybody else? 4. Any others?
	Rephrase	<ol style="list-style-type: none"> 1. My question was a little awkward, let me rephrase it. 2. I don't think you understood my question. I'm asking you to explain the ...
	Prompt	<ol style="list-style-type: none"> 1. You're on the right track, keep going. 2. Your answer is inappropriate, why don't you try again? 3. Keep trying.
	Clarification	<ol style="list-style-type: none"> 1. Try phrasing your answer another way. 2. Try to clarify your answer and tell me again. 3. Could you explain yourself further?
	Elaborate	<ol style="list-style-type: none"> 1. What can you add to that? 2. Can you tell me more? 3. What else? 4. Take your answer even further.

Sample Reactions for the Scanning Properties

APPENDIX C

VISUAL EXAMPLE

"Dragonfly"

Judy Derickson 1979

8 3/4" x 9" pencil drawing

(by permission of the artist)

APPENDIX D

VERBAL SUGGESTIONS FOR VISUAL OPPOSITES

Point		Size	
small	large	long	short
solid	outlined, empty	high	low
positive	negative	thick	thin
precise	diffuse, vague	wide	narrow
virtual	actual	large	small
wide	narrow	vast	minute
minute	vast	expanding	contracting
angular	circular	changing	unchanging
connected	separate	similar	different
moving	still	regular	irregular
concave	convex	even	uneven
raised	recessed	reduced	enlarged
light	heavy	normal	exaggerated
simple	complex	uniform	gradated
mechanical	natural	enormous	microscopic
two-dimensional	three-dimensional		

Line		Shape	
straight	curved	straight	curved
regular	jerk	angular	circular
precise, sharp	diffused, blurred	simple	complex
continuous	broken	regular	irregular
imaginary	real	even	uneven
narrow	wide	normal	distorted
long	short	full	partial
ruled	freehand	defined	vague
mechanical	natural	precise	suggested
raised	recessed, incised	symmetrical	asymmetrical
thick	thin	geometric	biomorphic
connected	disconnected	crystalline	cellular
paralleling	oblique	closed	open
even	tapering	positive	negative
smooth	rough	single	combined
positive	negative	complete	fragmented
direct	random	actual	imaginary
controlled	meandering		
attached	separate		

Plane		Position	
rectilinear	curvilinear	vertical	horizontal
straight	curved	perpendicular	parallel
wide	narrow	left	right
convex	concave	front	back
flat	warped	center	edge
solid	empty	inside	outside
edge	surface	on	between, around
surface	front, back, between	above	below
opaque	transparent	over	under
large	small	near, close	far, distant
textured	smooth	raised	recessed
paralleling	oblique	isolated	entangled
adjacent	interpenetrating	still	moving
flat	raised	stationary	changing
moving	still	supported	hanging
clear	cloudy	joined	detached
sharp	diffused	separated	overlapping
		free	touching
		center	ends
		similar	contrating
		aligned	displaced
		symmetrical	asymmetrical
Volume			
solid	open		
angular	curved		
opaque	transparent		
deep	shallow		
wide	narrow		
still	moving		
dense	sparse		
mass	void		
positive	negative		
enclosed	open		
Density		Number	
closed	spread out	single	double, triple
thick	thin	part	whole
compact	loose	few	many
massed	separated	one	group
concentrated	diluted	simple	compound
cluttered	spacious	added	subtracted
localized	scattered	multiplied	divided
bundled	separated	equal	unequal
compressed	expanded	odd	even
uniform	gradated	primary	secondary

Rate of Movement	
slow	fast
ponderous	swift
speeding	crawling
smooth	leaping
flowing	jerking
regular	irregular
even	uneven
rhythmic	random
active	inactive
starting	stopping
pulsing	shaking
changing	unchanging
controlled	uncontrolled
order	chaotic
continuous	discontinuous
energetic	languorous
uniform	changing
visible	too fast to see
evolving	sudden

Duration of Movement	
short time	long time
continuous	discontinuous
lasting	immediate
perpetual	fleeting
prolonger	stopped short
accelerated	reduced
constant	changing

Frequency of Movement	
often	seldom
regular	irregular
in a ratio	random

Sequence of Movement	
before	after
following	preceding
first	second
present	past
consecutive	simultaneous
regular	irregular
in order	unexpected

Change	
modifying	transforming
stable	shifting
permanent	fluctuating
unchanging	altering
gradual	sudden

Size of Movement	
large	small
sweeping	rigid
long	short
hovering	extending

Shape or Movement	
straight	curved
zigzagging	winding
restricted	meandering
easy	constrained
simple	complicated

Direction of Movement	
upward	downward
rising	lowering
horizontal	vertical
parallel	at an angle
forward	backward
inward	outward
concentric	radiating
around	up, down
expelling	absorbing
opening	closing
converging	diverging
bouncing	thrusting
clockwise	counterclockwise
advancing	receding
revolving	rocking
falling	rising
vertical	lateral
centripetal	centrifugal

Tool		Material	
pointed	linear edge	textured	smooth
one edge	many edges	rough	sleek
straight	curved	flexible	rigid
supple	rigid	delicate	thick, heavy
drawing	rolling	transparent	opaque
purchased	found	absorbent	repellent
manufactured	invented	commercial	found
hand tool	machine, power tool	still	moving
used singly	combined with others	gaseous	liquid
incising	adding to the surface	natural	synthetic
		cold	warm
		wet	dry
		unfinished	finished
Process		Interval (space)	
manual	mechanical	small	large
air-driven	photochemical	short	long
human-controlled	automatic	close	distant
familiar	unfamiliar	equal	gradated
economical	wasteful	regular	irregular
quick	recurring with time	ordered	random
adding onto	cutting away	connected	disconnected
extruding	intruding	near	far away
shaping	die-casting		
continuous action	time intervals		
Type of Action		Interval (time)	
wax	wane	frequent	seldom
flutter	agitate	regular	irregular
shake	pivot	perpetual	seldom
creep	jump	steady	uneven
dangle	quiver		
merge	cut		
bounce	roll		
pulsate	stir		
static	dynamic		

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