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Voices of Viewers: Iterative Research, Theory and Practice, Abigail Housen

Voices of Viewers: Iterative Research, Theory, and Practice

ABIGAIL HOUSEN
Visual Understanding in Education, New York, NY

The kinds of thinking and learning which take place when we look at works of art are complex and varied. The interaction between a viewer and an art object, which can trigger multiple responses and interpretations, suggests, if not requires, paradigms, methods and measures which can collect, mine, and reflect diversity and depth. This session will describe both quantitative and qualitative methods and measures used over the past 25 years to measure aesthetic response in a wide range of viewers in both longitudinal and short-term studies.

"Beauty is in the eye of the beholder" is a familiar claim. But this moment of interaction between a viewer and a work of art generates difficult questions for the field of aesthetics.

I began my research into aesthetic understanding by trying to capture viewers' responses to artworks: I wanted to know what took place in the mind of the beholder. Complex thinking and learning goes on when we look at works of art, and I believe that this interaction between viewer and art work requires paradigms, methods and measures capable of mining it. The bedrock of my approach to the eye, or mind, of the viewer, has always been research. Research on a comprehensive range of art viewers led to theory building. Then, the aesthetic development theory led to practice and ultimately the design of educational approaches for different viewers. This journey has been one of iterating research, theory and practice.

MY STARTING ASSUMPTIONS

Let me introduce my work as a kind of narrative. My original assumptions in approaching aesthetic research were purely naïve and intuitive; these assumptions served me well, but later I came to understand them in a more formal way. Twenty-five years ago, I was convinced that understanding the thoughts of the beginner viewer was essential to understanding aesthetic experience. Since all experienced viewers begin as naïve and unsophisticated, it seemed logical that the pathways from naïve to experienced art viewer were portentous. What the beginner beholds is fundamental to understanding and fostering aesthetic growth. At that time, in the late 1970's, this interest in understanding the aesthetic experience of the naïve viewer sharply contrasted with a more prevalent concern for expert viewing and information-based learning.

Concrete experiences, rather than intellectual abstractions, are what interest me. Writings in art and aesthetics are often very broad and theoretical, referring to such topics as artistic style, expressiveness, aesthetic preference, culture, and iconography. I felt that these types of abstractions were not useful. The terms clearly meant different things to different people, and meant very little, if anything, to the naïve viewer. Thinkers often wrote as if such categories were exclusive, while it seemed certain that many of the categories co-exist and overlap. Further, abstract categories often do not distinguish between beginner and expert viewers. We all make aesthetic judgments, but our judgments differ qualitatively (Dewey, 1958, Jung, 1974, Tolstoy, 1960, Langer, 1955, Danto, 1987 on general aesthetics; Arnheim, 1966, 1969, 1972, Kennedy, 1974, Berlyne, 1971, and Gibson, 1950 on psychological approaches).

I wanted to identify in the most concrete and particular words, the thoughts and feelings of naïve viewers. What terms do they use? What ideas do they have? I was interested in the moment-to-moment process by which viewers make sense of a work of art. Certainly, a viewer's 'micro level' thought processes could show us something of how we all build meaning about art.

I designed my research so that the viewer's response organized my thinking rather than the other way around. I chose not to fit field observations into pre-determined expectations or questionnaires, but instead tried to capture the aesthetic response as it occured. I looked for unguided responses from viewers. I thought it would be better to capture raw samples of the aesthetic response in motion, and then later hunt for patterns within those responses. Rigor must come from using good research designs and statistical analysis to understand and validate patterns that are found.[1]

Over many years of extensive research, a 'macro' view emerged, revealing distinct variations in aesthetic response. I knew that repeating types of cognitive responses are likely to imply developmental stages, often called milestone variables (other models of aesthetic development are suggested by Baldwin, 1975, Brunner, 1975, Clayton, 1974, Coffey, 1968, Murphy, 1973, Parsons, 1987). In other words, the interpretive frameworks of interest to experts differed from those of novice viewers. More specifically, art historical emphasis on style, period, material, and provenance, are not frameworks used by the naïve viewer. The entry questions posed by naïve viewers do not include words like texture, balance, or early versus late period. From the naïve viewers' to the art historians' questions, change has occurred (Barr, 1954, Berenson, 1963, Burkhardt, 1950, Clark, 1959, Croce, 1978, Greenberg, 1961, Hauser, 1958, Lippard, 1986, Vasari, 1944, Woelfflin, 1932).

WHAT IS THE AESTHETIC RESPONSE AND CAN IT BE MEASURED?

The principal method I use to collect data is a non-directive, stream-of-consciousness interview. The stream-of-consciousness technique is really not an interview, but a direct sampling of the aesthetic response in process. The process is a monologue, a thinking-out-loud as the viewer tries to make sense of the art object. Participants are asked simply to talk about anything they see as they look at a reproduction of a work of art, to say whatever comes into their minds. There are no directed questions, or other prompts to influence the viewer's process. Called the Aesthetic Development Interview (ADI), the open-ended interview method provides a window into a person's thinking processes.

Each monologue is transcribed and analyzed by breaking it into thought units: short phrases, often only a few words long, which represent the smallest coherent concepts expressed. These include everything from a simple noun, such as "tree," to formal comparisons to other works of art. The thought units are examined by comparing them to domains and sub-categories in the Aesthetic Development Coding Manual: a compendium of all the thought units collected from my original sample of interviews. The domains and sub-categories in the manual are designed to place the viewer along the continuum of a comprehensive set of stages from novice to expert.

The coding manual uses two types of distinctions: "Thought Domains" that identify broad classes of thoughts, and "Categories" that trace qualitative distinctions within those classes. In coding a thought unit, first, we look at the type of remark the viewer has made. S/he may say, "The ball is red .. .. The red ball reminds me of a lollypop .. .. I like the color red," or "The red is brighter here than here." Upon analysis it becomes clear that these remarks are fundamentally different from one another, even though each remark is about color. In our example above, the Domains are observations, associations, preferences, and comparisons.

Within a single domain, the remarks are then further subdivided into categories and then coded. For instance, within the Preference Domain, a viewer who says, "I like the painting because purple is my favorite color," is offering a different kind of justification for his/her preference than the viewer who says, "I like the painting because purple is an interesting unifying color." While we classify at first in terms of major domains (such as observations, preferences, associations, evaluations, or comparisons, etc), it is the second level refinements which fully illustrate the viewer's reasoning about a work of art. Here the specific distinctions in an individual's thinking are the primary lens into her aesthetic experience.

One or more trained coders examines each monologue and assigns a manual-based coding score (called an ogive score). This ogive score is then compared to the score assigned by a trained clinical reader, who also analyzes the same monologue. The final score for a subject is assigned when the two independent scores - ogive and clinical - match. We have consistently seen significant inter-rater reliability in these two types of scoring. Validity is supported by the fact that we arrive at the same stage score through two distinct analytic methods. Using this common framework, it has been possible to give a stage score to the different thought patterns of our diverse subjects, from beginner to experienced viewer (Housen, 1992).

THE VOICES OF STAGE I AND STAGE II VIEWERS

Out of this method has emerged five aesthetic stages: each represents a different way of making sense about a work of art. At each stage, a viewer responds to a work of art in a uniquely characteristic way. In other words, the way in which a beginner viewer makes sense about a work of art differs dramatically from that of even a slightly more experienced viewer. While a beginner viewer will talk about what the painting reminds him/her of, a somewhat more experienced viewer will discuss how the painting was made.

The following table provides an overview of each of the five aesthetic stages:

Housen's Stages of Aesthetic Development

Stage I – Accountive

Accountive viewers are storytellers. Using their senses, memories, and personal associations, they make concrete observations about a work of art that are woven into a narrative. Here, judgments are based on what is known and what is liked. Emotions color their comments. Such viewers seem to enter the work of art and become part of its unfolding narrative.

Stage II – Constructive

Constructive viewers set about building a framework for looking at works of art, using the most logical and accessible tools: their own perceptions, their knowledge of the natural world, and the values of their social, moral and conventional world. If the work does not look the way it is "supposed to" – if craft, skill, technique, hard work, utility, and function are not evident, or if the subject seems inappropriate – then these viewers judge the work to be "weird," lacking, or of no value. Their sense of what is realistic is the standard often applied to determine value. As emotions begin to go underground, these viewers begin to distance themselves from the work of art.

Stage III – Classifying

Classifying viewers adopt the analytical and critical stance of the art historian. They want to identify the work as to place, school, style, time and provenance. They decode the work using their library of facts and figures, which they are ready and eager to expand. This viewer believes that properly categorized, the work of art's meaning and message can be explained and rationalized.

Stage IV – Interpretive

Interpretive viewers seek a personal encounter with a work of art. Exploring the work, letting its meaning slowly unfold, they appreciate subtleties of line and shape and color. Now, critical skills are put in the service of feelings and intuitions as these viewers let underlying meanings of the work – what it symbolizes – emerge. Each new encounter with a work of art presents a chance for new comparisons, insights, and experiences. Knowing that the work of art's identity and value are subject to reinterpretation, these viewers see their own processes subject to chance and change.

Stage V – Re-Creative

Re-creative viewers, having a long history of viewing and reflecting about works of art, now "Willingly suspend disbelief." A familiar painting is like an old friend who is known intimately, yet full of surprise, deserving attention on a daily level but also existing on an elevated plane. As in all important friendships, time is a key ingredient, allowing Stage V viewers to know the ecology of a work – its time, its

> history, its questions, its travels, its intricacies. Drawing on their own history with one work in particular, and with viewing in general, these viewers combine personal contemplation with views that broadly encompass universal concerns. Here, memory infuses the landscape of the painting, intricately combining the personal and the universal.
>
> – Abigail Housen

In addition to the five stages, there are transitional stages. These occur when patterns of thinking from two adjacent stages co-exist. For example, in Stage I/II, idiosyncratic Stage I responses may occur simultaneously with more object-centered Stage II responses.

As with all cognitive development, growth is generally related to age. But aesthetic development is not determined by age. A person of any age with no experience with art will necessarily be in Stage I. Age or education will not make an adult at a higher stage than a child. Exposure to art over time is the only way to develop aesthetically, and without time and exposure, this development does not occur.

Over the course of our studies, most of our interviewees are beginner viewers, ranging from stages I to II or II/III (the transitional stage between stages II and III). Even among the frequent museum-goers we have interviewed, there are relatively few people who have had sufficient interaction with art to develop beyond stages II/III. This bears repetition because it is not the assumption of most art museums: there are but a few people wandering through the halls of museums at stages IV and V

The following passages are selections from viewer interviews from Aesthetic stages I and II. The viewers are looking at a reproduction of Pablo Picasso's "Girl Before a Mirror."

Stage I viewer:

> Um, looks like there's a lady right here. Looks like she is hugging a man right here and looks like they might be living in a castle, they might be rich or something, and they're all dressed up, they just got back from a party it looks like and this guy like colored his hair or something. And it looks like this right here looks like a sword or something that carries stuff in, and um, there, this is some of his clothes down here. Lots of windows behind there, this is the woman's body, little bubbles, looks like she may be pregnant, um...Looks like you can't see the rest of her arm. This looks like a snake, um, that striped stuff looks like it could be around her neck...her face looks like an Indian...

The Stage I viewer starts with a random concrete observation "looks like there's a lady..." The viewer then immediately interprets the other figure, not as an image in the mirror, but as another person, a man, who is being hugged. The viewer does not look more closely to see if this really is another person, or if it makes sense that it is a man. From this immediate interpretation, arrived at without any further deliberation or reflection, the viewer launches into story telling. The image becomes the basis for constructing a narrative, one that has a rather inexact connection to the painting, rooted in the first quick interpretation. Our viewer's aesthetic experience is the story, which flows forward in an easy and unselfconscious way, spanning from one imaginative association, which is quite idiosyncratic, to another (castles, swords, etc.).

Our second viewer, at Stage II, notes:

> All right, I see what looks kind of like a pretty image. I see a face that has like different dimensions in it. Half looks normal and the other half…looks pretty much um looks in pain, actually. Confusing picture, has a lot of different things in it. Not really a realistic picture. Lot of different colors, um has…don't have actual, like really normal bodies, they look drawn pretty umm sloppily. And it looks like a mirror on the right side that the girl's looking into…But the reflection she's looking at is different. And that's about it…I'm looking at the mirror because she's like, it's like a mirror somehow, but the reflection is different, she's looking at herself. I'm looking at the background, it's like, I don't get it…I don't get it at all…

On the surface, this voice may sound similar to the first: they are both clearly beginners who know little about the formal properties or language of painting. But a close analysis of each of their thoughts reveals many differences. To begin with, the second viewer makes many observations, and they are not simple ones: I *see a face that has, like different dimensions in it. Half looks normal and the other half...looks pretty much um looks in pain actually* …. these remarks reflect a more careful looking process. They reflect interest in how things are made, how well they are done, and whether the rendering fits into the viewer's idea of what is normal – what is familiar to their language, art, history, religion or customs: *Not really a realistic picture. Lot of different colors, um they don't have actual like really normal bodies, they look drawn pretty, uh sloppily...* These observations are supported and linked in a more systematic and detailed way: *And it looks like a mirror on the right side that the girl's looking into. But the reflection she's looking at is different...* Gone are the personal or idiosyncratic stories we hear at Stage I. This viewer is beginning to be aware of artist intentionality, scanning for hints on how the painting is made, and an effort to come to terms with the reason a painting was made in a particular way: *I'm looking at the background, it's like, I don't get it. I don't get it at all...*

What has shifted between these two voices, these two stages?

We see a movement:

- from idiosyncratic storytelling to describing more of the picture's details;
- from personal or idiosyncratic associations to one's own cultural or conventional associations;
- from a few and random observations to more and more linked observations;
- from simple observations to detailed, more complex observations;
- from simple observations to observations that refer to art making and art viewing;
- from fanciful, personal imagination (egocentric ideas) to an increase in observations with a concrete point of reference which others can see, and refer to;
- from an approach of "look once and imagine" to an approach of "look many times, look more carefully and puzzle."

These gradual changes appear consistently, repeated in thousands of samples, from many different kinds of viewers, from different parts of the world.[2]

I believe that these shifts are natural, and predictable, revealing something fundamental about the human aesthetic response, its cognitive origins and developmental trajectory. Further, these shifts are extremely important. I believe that they represent the shift from what might be called a storyteller, or an imaginatively resourceful viewer, to a 'nascent analytic' mode in which the viewer becomes both capable of, and interested in, decoding the artist's intentionality and technique, as well as in classifying the work of art within his/her own culture.

In a sense this shift (and others that beginner viewers make) are the grand entrance to the world of aesthetics. One must pass through these necessary initial states to arrive at the higher stages of expert viewing. However, while nearly all humans learn to run at early ages and with no explicit instructional help, not all people evolve to a form of expert aesthetic response, even if they have been instructed. In our studies of aesthetic response, in museums and in schools, we find the predominance of adult viewers at or near only Stage II.

FOSTERING AESTHETIC DEVELOPMENT

Clearly, if so many viewers are still beginners, we cannot take aesthetic progression for granted. How, then, do we support aesthetic growth? Surely, this is not a matter of studying what experts do, and then instructing novice viewers to do the same. This expert approach to education is a very old one, with a long history of failure. It is reminiscent of 19th century American paintings of children who are depicted as adults, only a lot smaller – a view of childhood that, in most places, has long since been abandoned. If the top-down educational approach of instructing novices to act like experts really worked, everyone would be an expert, and at a very early age too.

If the viewer's monologues are the product of an active attempt by the viewer to discover and construct meaning, viewers themselves are telling us what is important to them. At each stage viewers are showing us the

different ways they find and construct meaning. There is an active process of trying out strategies in order to build knowledge. These monologues illustrate Constructivist philosophy (Arnheim, 1966, Baldwin, 1975, Bruner, 1955, 1966, 1971, Dewey, 1958, Duckworth, 1996, Kuhn, 1997, Piaget, 1928, 1936, Twomey Fosnot, 1996, Vygotsky, 1962, 1971) which tells us that learning does not come in 'pre-packaged' answers. Effective learning is discovery built from firsthand understandings, which have been internalized.[3] We hear the individual voice at work within each stage. One Stage I viewer may be a list-maker, another, a storyteller.

CREATING A CURRICULUM

How does one create first-hand experience and learning? My colleague, Philip Yenawine, and I designed a curriculum which sets up an environment of group discovery. This means providing both a stimulus (an art object or reproduction of one), a way to focus attention (carefully paced, sequenced, and crafted questions and images), and a process (teacher-facilitated discussions) that keeps attention focused in a desired way and allows puzzling, reflecting, and constructing to unfold. In this way, the learner gets a lot of opportunity to try to build meaning one way and then another. He also gets exposure to the thinking of peers, which can accelerate shifts in his own thinking.

The curriculum and methods are called the Visual Thinking Strategies (VTS).[4] The VTS is a student-centered curriculum designed for the general classroom. It is comprised of developmentally appropriate questions, which prompt students to examine and discuss structured sequences of images. At each grade level, the classroom teacher facilitates all lessons; nine classes are held in school, while the tenth takes place in an art museum. The role of the VTS teacher is to pose the open-ended questions of the curriculum, encourage the group members to think out loud, encourage every participant to speak, and allow repeated opportunity to share what is seen. The teacher, through asking a sequence of questions, keeps the discussion focused on the art work but does not impart information; paraphrases student comments, but does not evaluate responses; links diverse remarks, but does not favor any; and insures that all are given a chance to speak. Discussions last for 45 minutes to one hour.

There are various components of this curriculum and method, but we will explore one which illustrates the relation between our research and the choice of the VTS questions. Through mapping the natural unfolding of aesthetic thoughts and by understanding the mentality of each stage, we find a rich set of guidelines for developing curricula. The interests of a particular stage allow us to formulate precisely targeted questions, posed in an optimal sequence.[5] The two beginning questions in the VTS are:

What is going on in this picture?

What do you see that makes you say that?

We find that students, teachers, and museum educators agree that these are good questions. They were chosen so that all students can respond to them, and we have found that all do. In other words, these questions get all students talking, even those who are usually silent. They are intended to engage students and produce growth from stages I to II. What is their 'inner logic'?

What is going on in this picture?

What makes this a good question? First of all, this question is designed to fit the frame of mind of Stage I. This first question asks students to do something at which they are naturally expert: **storytelling.** By inviting students to do the thing we know from our research that they can already do very well, we draw them into to the discussion and get them engaged. Everyone participates because everyone feels able. Carefully selected images let students probe deeply and extensively. When students remain silent in school, often it is because they are not sure that they know *the* right answer, which they know that the teacher and some very smart classmates do know. Students keep silent to avoid being evaluated; they want to avoid making mistakes and looking foolish. But with art there is no single right answer. There are generally many 'right' or valid answers because art is rich in meaning, full of paradox, ambiguity, and complexity. The key is to bring out, and make room for, many diverse responses and validate each response as a legitimate experience. Teachers do not compare and evaluate the aesthetic response of one student relative to another. Instead, through facilitated discussion, teachers try to stimulate careful looking at works of art, to promote articulation and the sharing of ideas, and to confirm the student's experience in a non-evaluative environment. The first question allows the students to be active and successful at decoding the work of art. It is inclusive and invites – and succeeds in – getting students to participate in the group process. We have found this question to be exceedingly effective.

What do you see that makes you say that?

The second question, What do you see that makes you say that? pulls toward Stage II thinking. One of the key traits of Stage I is that the viewer quickly and randomly scans the art work, has an association, and immediately begins storytelling. In that process, the viewer may not spend time looking at or pay close attention to the work of art, but rather to some mental picture emerging in his imagination. What the Stage I viewer does not do frequently – and the Stage II viewer does – is to take a second look. Looking again, looking more closely, is what the second question prompts. But it also subtly asks the viewer to supply evidence to back up his answer to the first question. "What do you *see* that makes you say that?" asks the viewer to identify particular parts of the image and relate that back to his first answer. Now, the viewer must support what she says. Brief random looking – at the big and the bright – gives way to looking that is longer and harder, at smaller and subtler aspects of the painting. In supporting her own hypotheses, the viewer is encouraged to speculate and perhaps to interpret. She must revise, edit ideas, and provide evidence for her interpretation of the image, grounding her remarks in what she sees in front of the image, grounding her remarks in what she sees in front of her, not what she learned two weeks ago. New observations, peer comments, and the teacher facilitation all assist in this process.

Thus, the student has time to practice thinking in a new way that is not entirely customary, yet not out of reach. By looking again, reconstructing, and developing new hypotheses, the student learns that aesthetic experience is open-ended, subject to multiple interpretations. He experiences that it is alright to make mistakes, that the more you look the more you see, that it is alright to change your mind, and that it is enjoyable to engage in this kind of problem solving. All of this is, of course, good inquiry behavior, useful throughout a student's education.

RESEARCH FINDINGS

Over the years my colleague, Karin DeSantis, and I have addressed the question of responsible research in our studies in various ways. The coding analysis addresses inter-rater reliability. Issues of validity have been addressed by broadening our sample to look at questions of completeness of stages, and sequentiality. Our new populations vary by age, socio-economic level, ethnicity, and educational level.[6] Longitudinal studies address issues of content and construct validity as well as sequentiality. Qualitative analysis and quantitative methods are used together on the same data. Finally, supplemental data collected through questionnaires and observation logs allow us to triangulate information. For example, variables such as demographics, or art and museum profiles, are patterned by aesthetic stages. Such orderings provide additional support for interpreting aesthetic stages as a developmental progression of aesthetic understandings. The open-ended interview itself remains amenable to mining in new ways as new research questions are raised.

Studies of the VTS have validated the curriculum and methods – as well as helped to refine the materials. Recent analysis of findings from our longitudinal study in Byron, Minnesota shows that the VTS curriculum is a powerful basis for aesthetic growth. In the Byron Study, randomly selected experimental and control students from matched neighboring schools took part in sequential VTS lessons from Fall 1993 to Spring 1998. In addition to the VTS classes, experimental students participated in a school-wide annual artist residency and for the most part, regularly-scheduled art classes. Control students maintained their strong and ongoing district-sponsored studio art classes but did not receive additional arts programming. A DBAE-trained teacher taught the art classes in the control school. Data was collected from twenty-five experimental and twenty-five control subjects in two age groups (2^{nd} and 4^{th} grades) for the five year period.[7]

Findings in the Byron study mirrored three of our other studies: students who take part in the VTS show aesthetic stage growth.[8] Figure 1 shows the distribution of subjects in the Experimental and Control groups. Note that the Experimental subjects began the study in the first year with a slightly lower aesthetic stage distribution than Controls. However, by the end of the fifth year, Experimentals clearly show a higher aesthetic stage distribution. The fifth year differences are significant ($p=.0005$).[9]

The VTS also affects more than aesthetic stage. The learning skills fostered by the VTS – making observations, supporting observations with evidence and speculating – all of which are measures of aesthetic growth, also comprise the fundamental building blocks of critical thinking skills. So, as the VTS curriculum invites students to freely share their interpretations of works of art, to articulate and support their point of view and to come to understand, appreciate and build upon the varying perspectives of their classmates, it is simultaneously and by its very nature nurturing the development of critical thinking. The non-evaluative environment of the VTS encourages students to build these skills as they are accelerating through their growth in aesthetic stage.

In the end of Byron Year II Aesthetic Development Interviews, we found significant differences in observing skills between Experimentals and Controls: older and younger Experimentals made more supporting observations and speculative observations than Controls ($p=.0282$). By Year V, differences could be measured in interviews with students using non-art objects (in Year V, we used a candle-snuffer): again, Experimentals showed significantly

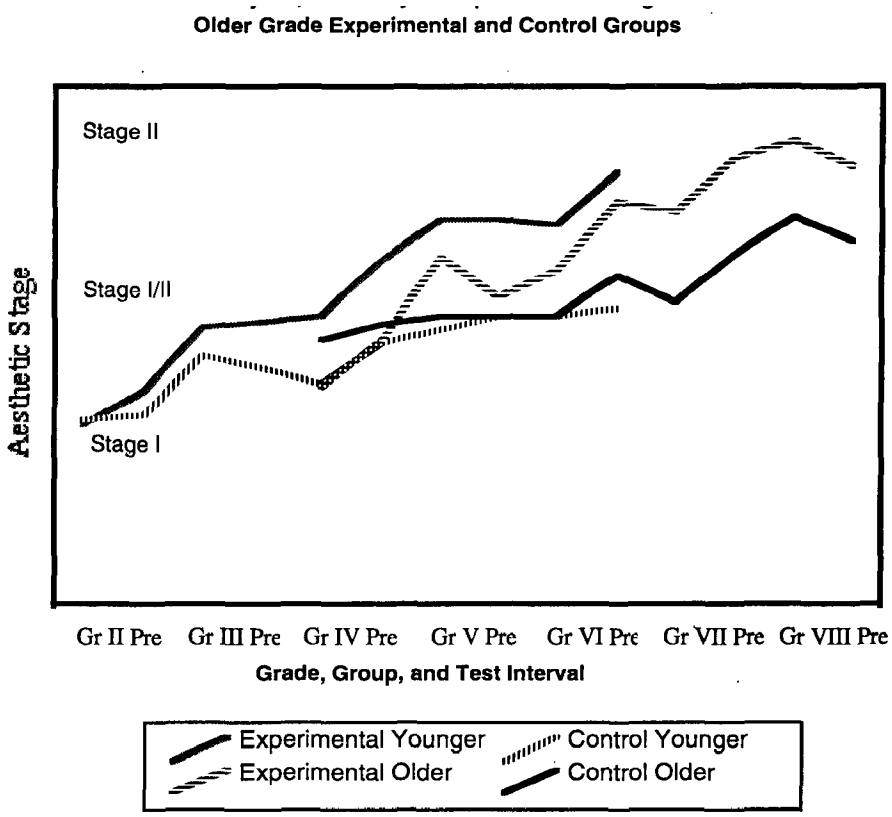

Figure 1. 1994-1998 Byron, MN Study: Comparison of Younger and Older Grade Experimental and Control Groups

higher mean scores than Controls ($p<.0132$) – the most general indication of transfer and providing strong evidence for the transfer of thinking about art, to reasoning about non-art related content.[10]

CONCLUSION

The Aesthetic Development Interview traces in a detailed way what goes on in the viewer's mind while looking at a reproduction of a work of art. The interview method and coding measure elicits rather than buries distinctions in aesthetic response, capturing a multiplicity of perspectives. The stream-of-consciousness interview provides a window into individual thoughts and their accompanying growing set of aesthetic problem-solving strategies. Staying close provides a window into individual thoughts and their accompanying growing set of aesthetic problem-solving strategies. Staying close to the voice of each viewer, we study the voices of many. The result is a robust model – a rich account – of how multiple aesthetic perspectives arise, develop, and become transformed. Moreover, by providing us with a way to zero in on the kinds of ideas that are naturally accessible to every kind of viewer, the model allows us to ground the design of provocative questions, and curricula, that are powerful and engaging.

Our original intention was to map aesthetic development in order to better understand and mine it for schools and museums. Along the way, we have been able to see how aesthetic thinking touches on key issues central to schools today, in particular, critical thinking. As our educational method provokes the process whereby students find meaning in works of art – and as our research methods measure this – we see our students bringing the skills of the art viewer to the challenges of the classroom.

Author's Notes

1. The work of Jane Loevinger has been instrumental in the development and design of my research methodologies (Loevinger, 1966, 1970, 1976, 1979, Loevinger, Wessler and Redmore, 1970).

2. "Interim findings from the cross-cultural implementation of the Visual Thinking Strategies." Presented at the 1999 National Art Education Association Annual Conference; "Presentation of findings from the Art Education for the Blind study." Presented at Art Education for the Blind and the Museum of Modern Art Symposium: Crossing the two-dimensional barrier: How to make museums accessible to blind and visually impaired viewers, 1994.

3. Constructivism and developmental theory offer meaningful guideposts for aesthetic education. Constructivist teaching supports the evolution of the student'. reasoning. It posits that student learning occurs as students actively build on their own understandings to form new meanings, In trying to interpret an image, a beginner learner starts to realize that all the marks on the page cohere and together form meaning. With this insight and with time, the learner realizes that this coherence could not have happened by chance; someone planned this connectivity Once discovered, intentionality becomes a new basis for interpreting a work of art. To look at art in this new way, the learner builds on his own discoveries, and does not appropriate the experts' way of seeing.

4. More information on the Visual Thinking Strategies is available at www.vue.org. First conceived and written by Housen and Yenawine with Amelia Arenas in 1993, the VTS was originally called the Visual Thinking Curriculum (VTC). It was adopted by the Museum of Modem Art, which has since made extensive use of the VTC. The VTS is an elaborate new design, based on new research, additional questions, multiple years, modules, and a new teacher-training program.

5. On a superficial level, our approach resembles Socrates' method of asking leading questions. The famous dialectical approach, illustrated in the oft-quoted passage from Meno, involves Socrates eliciting an understanding of geometric principles from an ignorant slave boy. Socrates is asking a kind of 'leading question', helping the slave boy move from one insight to the next in order to derive the correct conclusion. But our approach is different in a significant respect. We are not leading the learner towards a specific conclusion, in a step-by-step sequence. Rather, our questions ask a learner to pay attention to a different way of discovering or constructing meaning We are modeling for the learner a new way to gain understanding. Our 'new' questions come from the learner's own unspoken questions, both of which bring engagement and practice, which bring in turn new connections, understandings, and habits of mind. Here the word 'new' is partially misleading. As with the Socratic method, the conclusions are new only in the sense that the methods are not explicitly or consciously known or used by the learner. But the resulting insights in aesthetic practice differ from the 'truths' Socrates sought, in that the experience produced may be genuinely novel and that we are not seeking an ultimate correct response.

6. For a full listing of our studies please consult our website www.vue.org. Since the late 1970s we have collected over 6000 ADI transcripts. Several studies collected longitudinal data for four years or more. Some headlines of the patterns we observed are: 1. There is extensive evidence of the validity and reliability of the aesthetic measure. 2. The types of thought that emerge in the transcripts do not appear to be different amongst various US. and Eastern European populations. 3. Aesthetic thinking is largely a stable trait, remaining the same over many years. 4. Change in stage happens slowly, at best over many months, but usually over years. 5. In measuring the aesthetic stage in children, their teachers, museum professionals, and the general adult population, the single most important factor predicting level of aesthetic development is the amount time individuals have spent viewing and reflecting about art. 6. It is possible to identify micro-changes (categories of thought that shift significantly in a few months) even if stage change has not occurred.

7. Ongoing follow-up findings on the experimental and control students are not included in this discussion.

8. Visual Thinking Strategies Study 1994-96, St. Petersburg Russia, Visual Thinking Strategies Pilot Study 1996-96, Almaty, Kazakhstan, Boston Museum of Fine Arts Pilot Program Research Study, 1996-96.

9. Aesthetic Thought: Findings, Growth and Transfer." Presented at the 2000 National Art Education Association Annual Conference.

10. This is in contrast to a recently published study by Ellen Winner and Lois Hetland which found no link between arts and other academic performance. "Mute Those Claims: No Evidence (Yet) for a Causal Link between Arts Study and Academic Achievement," The journal of Aesthetic Education, 2000.

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