

PRELIMINARY REPORT - YEAR 1 (1989/90)

MoMA RESEARCH AND EVALUATION STUDY: SCHOOL PROGRAMS

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PREFACE

The emphasis of The Museum of Modern Art's instructional programs is on "visual literacy." We define this literacy as involving a number of actions (observation, analysis, speculation as to meanings, discrimination), and we teach a "method for looking" intended to sharpen and develop these natural actions/reactions and to bring them into more conscious focus as cognitive operations. As part of this process, we bring in "acquired information" (biography, historical context, art history, stylistic and critical data); but, more important, we concentrate on helping beginner viewers to observe works of art closely, to analyze what they have seen and to assign meanings. Most of us in the Education Department assume that the information or experience we present has a memorable impact on viewers, and that success reveals itself in people's ability to articulate their thoughts about works of art.

In keeping with this overall mission, the Museum offers Teacher Training Workshops as part of its school programs. We do this specifically to help teachers acquire new skills and knowledge that will enable them to introduce art meaningfully into classroom practice. Despite staff consensus regarding goals and methods, however, initial findings of the research described in this report indicate that our expectations are too high. We expect too much to happen too quickly. The teachers with whom we work are smart, eager, well-spoken and dedicated. It is easy for us to presume an existing common language, and although we consciously avoid jargon, we freely refer to words such as "brushstroke" and "balance" as terms everyone knows. The data here show that many teachers (and their students) have no functional understanding of these words as they are used in describing art.

One cause for confusion is that people appear to understand what we discuss with them (and probably do) while we are together. But successful education involves structuring the experience of data and phenomena in such a way that the learner not only comprehends it, but also can incorporate it meaningfully into his or her behavior. It appears that we accomplish the former, at least much of the time; however, the results of this study indicate that the latter still eludes us.

Put simply, the data indicate that most teachers and students advanced only marginally in aesthetic development during the period of the study; the exception was the few fairly experienced viewers. Moreover, most did not exhibit a command of a certain basic vocabulary, indicating that the desired visual literacy was not achieved through the programs.

The decisions to work with a "method for looking" and to build visual literacy skills are the result of careful analysis of research conducted in the mid '80's. Various studies indicated that many visitors lacked skills and insights in looking (a fact known to lecturers all along), and therefore meaningful "aesthetic experiences" were precluded. In the past, Museum programs have concentrated on supplying historical background, including biographical and cultural data that indeed can inform an audience and illuminate works of art. It is thought (probably correctly) that increasing the viewer's exposure to art while providing factual data and critical insights will, over time, develop the individual's own critical skills. Too few such opportunities exist, however, and our visitors lament their lack of preparation for viewing art.

In any case, this approach per se does not enable the novice viewer to behave or think in a manner akin to an experienced one. We might consider this analogy: If we want people to enjoy literature, we not only explain Shakespeare, we also teach reading; an essential prerequisite for appreciating a work of literature. Additionally, we would need to give historical information about the writer, the context, the characters and the plot or circumstances of the play. In the visual arts, we provide no similar initiation, and yet we expect people to appreciate complex visual structures, never having given them the essential tools. It is this kind of awareness that informs our practice.

One problem in measuring the effects of teaching is the common belief that "good teaching" is more about style and intent than content; that a "good teacher" educates by communicating well, mostly by modeling a certain thinking process or knowledgeable behaviors. The assumption that others learn from our charisma, concern, energy, command of language or exemplary thinking processes, however, is incorrect - unless we also provide content that considers the audience's abilities and

challenges them appropriately given their stages of development. To restate the situation, we can engage people by our teaching, but still not open doors to their own growth.

Examining critical assumptions has required healthy curiosity, strong egos and immense courage on the part of our highly experienced, well-informed professional staff. Posing the questions, "Do teachers learn what we teach them?" and "Can they in turn teach their students these new processes, ideas and information?" is, after all, threateningly fundamental. The MoMA staff takes pride in its openness to criticism and change; our programs are neither static, non-responsive nor impervious to improvement, and they tend to be fairly intensive. Classes are carefully planned to appeal to particular audiences, executed and then regularly critiqued and refined.

In terms of subjective evaluations, we have consistently positive responses from participants. We have files full of accolades, sheaves of letters from individuals thanking us for our contributions to their skills and knowledge, and particularly, for increasing their sense of ease in the Museum. A few even credit us with changing their lives.

Why should we even doubt the impact of our work? Because we could not reliably characterize how much teachers knew before and after participating in museum programs, and evaluation of our work therefore remained subjective. To amend this, we have taken advantage of a measurement tool that analyzes, in a systematic, step-by-step manner how people think about art. We have applied this methodology to discover if our attempt to supply an essential vocabulary for describing the experience of art is actually working, and if, therefore, people advance in their aesthetic development.

We are not using this study and its unsettling data to judge past efforts harshly, and certainly not to reflect badly on our program participants. Rather, new developments in learning theory, and research methods such as Dr. Housen's, afford us the first objective measures with which to study what we do. Some conclusions - for example, that it takes more time to produce significant change than we normally have with Museum audiences - seem obvious once stated, but hindsight is always easy. The point is that art museums can now study the ways people think about art to a degree not possible before. As a result, we can establish new sets of realistic goals for gallery talks, workshops, wall labels and so forth.

This report on first-year findings is being written while data is collected for the third year of our study. It reflects much of what we learned in order to shift gears for Years II and III; however, the findings conclude only what can be supported by research data gathered in Year I.

Even so, this data was sufficiently clear to suggest that we alter our Teaching Training Workshops in Year II to allow for eight sessions instead of four, spread out over a longer time span. We also asked some classroom teachers to take a more active role in teaching their students, with our staff on hand in a "mentoring" capacity. In addition, we monitored the content of workshops more carefully to confirm that the concepts and skills that we thought were embodied in our lessons were in fact clear, and we greatly increased our internal staff training. More important, we revised our notion of the precise skills, concepts and vocabulary that constitute visual literacy, breaking it down into concrete and formal operations that now suggest, for example, sequential curricula.

As we continue to challenge some of our most basic practices, we find that additional information can feed almost seamlessly into our teaching. For example, avoiding assumptions about people's ability to comprehend abstractions (such as balance) before they have sorted out more concrete, observable elements in works of art has proved useful. Getting more specific about stage-appropriate vocabulary is beginning to feel "o.k.", despite its overtly instructional objectives. Practiced as we are, our growth as teachers is being positively reinforced.

Our commitment to visual literacy as a curriculum is growing too. We see it as an essential step toward a broader and equally essential cultural literacy.

We are working toward a curriculum (and, eventually, a series of approaches) that will give people the exposure and the vocabulary needed to "see", - to comprehend - a work of art, providing them

entry into other works whose greater meanings will thus become available. Moreover, by studying teachers and their students, we have a demographically representative sample of our entire audience - that will shed light on all our teaching efforts.

Philip Yenawine
Education Department

EXECUTIVE SUMMARY

Museum education departments constantly confront a few core questions. Most central is how to make the art in museums meaningful, and thus appealing, to potential and/or real audiences. Learning how to make art meaningful in turn raises a number of questions:

If left to their own devices, how do people naturally interpret art?

Is there one predominant way in which visitors interpret art, or are there multiple ways?

Museum education departments have a variety of channels for communication with visitors--gallery talks, slide lectures, video programs, displays, labels, publications, in-school and outreach programs, etc.:

If museum audiences can be subdivided, which program and what methods and content are appropriate for a particular visitor or group?

In order to address these questions, museum staffs first must use simple research techniques to probe and capture the thoughts of audiences, particularly people who are not trained or experienced viewers. Furthermore, museums must conduct such research guided by a theoretical framework, which includes related research methods and supports on-going study to guide program development.

For the past six years, the Education Department at The Museum of Modern Art has directed an ambitious teacher training program, intended to help middle school and high school teachers work more effectively with art in their classrooms. In February 1988, the Department initiated a multiyear study, using research methodologies designed to gather information that would provide a better understanding of the characteristics and needs of teachers and students participating in these established programs. While clarifying the goals and the philosophy of the Department, it was also expected that the findings of the study would make notable contributions to museum/school programs in general, as well as have implications for other museum audiences. This would be done by providing new data on how people team about art.

MoMA's research effort has pursued the stated questions in a systematic, rigorous and empirically-driven fashion. This interim report uncovers not only the following specific findings, but also an evolving set of general positions on the questions listed above:

The way to make art more meaningful is to understand the frames of meaning that viewers bring to works of art.

There appears to be a finite number of hierarchically sequenced ways of interpreting art. Audiences can be subdivided by distinctive ways of thinking (see Appendix A--Stages of Aesthetic Development).

Museums can increase their educational effectiveness by expanding the ways in which their audiences think about art.

Educational programs can speak to the naturally occurring dimensions of thought, as well as attempt to facilitate movement toward a broader repertoire of interpretation.

Visual literacy curricula can be designed to accommodate the diverse needs of viewers as a part of effective educational programming (see Appendix B-Tools of Visual Literacy).

Educational effectiveness can be defined, in part, as broadening the interpretational repertoire of the viewer, so that artworks become more

interesting and museum visits become proportionately more stimulating and satisfying.

Summary Findings:

1. The teachers and students studied are diverse in terms of ethnicity, art background, age and training. The sample approximates the diversity found in New York City public schools. In the case of the teachers, the sample is also representative of the Museum's general adult audience in terms of age, education and experience with viewing art.

2. Level of art experience of the sample:

Most teachers are beginner viewers (Stages I, II, Transition II/III; see Appendix A).

Most students are also beginner viewers (Stages I, II, Transition II/III).

Museum staff and experts are, as expected, experienced viewers (Stages Transition III/IV, IV, Transition IV/V, V).

Many teachers are at the same level as their students.

Many teachers are several stages away from Museum staff and experts.

3. The pre-test stage of teachers and students was related to treatment.

More intensive treatment attracted and retained higher-stage students.

More demanding assignments were completed by higher-stage teachers.

4. Understanding visual literacy skills and concepts deepens at each aesthetic stage and cognitive level (see Appendix A). Visual literacy skills and concepts are differentiated at each stage (see Appendix B-Tools of Visual Literacy).

Stage I viewers show a very rudimentary understanding of visual literacy skills and concepts.

Sixth grade Stage I pupils are newly confronting both abstract concepts in general, and aesthetic concepts in particular.

5. The teacher training program needs to be codified in order to understand whether relatively small increments of change were a result of subjects' inability, to assimilate information, failure to receive information or misinterpretation of delivery.

6. Based on these findings, a number of program design issues and guidelines are enumerated that could effect the direction of future programs.

I. PROJECT DESCRIPTION

Studies of visitors to The Museum of Modern Art in 1986/87 identified three types: novices, experts and those in-between. While these categories could be defined in general terms, the definitions were too vague to be conclusively useful. With this in mind, members of the Education Department proposed to examine the different types of learners in the Teacher Training Workshops; these teachers represented a definable group within the adult audience, and they were demographically representative of all visitors. Over time, after reading about the aesthetic development model, discussing it in several staff meetings and a staff workshop, we elected to use this model to gain deeper insight into our program. This mechanism enabled us:

To understand audience diversity ranging from the naive to the sophisticated viewer.

To learn "from the viewers" how they understand works of art.

To measure what viewers absorb from programs and, hence, whether or not participants learn what is taught;

And in the case of classroom teachers, to measure whether or not their learning could be transmitted to their students.

To see this data in the context of viewer demographics, including their experience with art.

To create a taxonomy of visual literacy which could be mapped for use in curriculum development.

The task was explanatory: 1) to apply the aesthetic development model and measurement strategy, 2) to clarify the realities and dynamics of the teacher training program and 3) to cite ways to enhance program effectiveness.

The study asked:

What are the ages and cultural and educational backgrounds of the teachers and students?

What is their experience in looking at and finding meaning in modern art?

Does visual literacy increase as a result of MoMA's teacher training program?

Are subjects better able to think about and find meaning in works of art after museum programs?

Can teachers, both classroom generalists and art specialists, learn to teach art as the museum educator does?

How do attitudes about art and museums affect the teaching process?

Are the Education Department's program goals realistic?

How might the Department apply the findings to improve programs, particularly in terms of its own staff preparation and the creation of curricula?

II. EXPERIMENTAL- SAMPLE, PROGRAMS STUDIED AND TREATMENT

Sample (see Appendix C--Sample Description):

The Year I sample was comprised of 250 English-speaking teachers and students in New York City's public schools, as well as the Museum's teaching staff and other MoMA experts. Effort was made to include subjects living in all New York boroughs. The sample was divided into 12 groups by grade--sixth-graders, high school students, middle school teachers and high school teachers--and by type of treatment.

Teachers included both classroom generalists who met daily with their students for the full day and art specialists who met with their students one to five times a week for varying periods of time. In most cases, participating teachers represented a highly motivated group who wished to establish, or to continue, a relationship with The Museum of Modern Art.

The students were sixth-graders and high school students, chosen to reflect the Museum's school audience in general, as well as the demographics of the New York City public school population.

There were controls groups for both teacher and student samples, none of whom had ever participated in a MoMA program.

"Experts" included curators and educators working for the Museum.

Core Programs Studied (see Appendix D--Program Descriptions and Hand-Outs (1988)):

•**Teacher Training Workshops** - A series offered on four consecutive Thursdays, after school, for two hours each, these sessions were designed to enrich teachers' understanding of issues in modern art and to help teachers integrate such issues into classroom curricula. Themes of the workshops covered The Modern Figure, The Modern Portrait and The Modern Landscape, with some subjects extending over more than one session. Along with the goal of increasing the teachers' visual literacy (their ability to describe, analyze and interpret works of art), our objective was to empower them to repeat the process with their students. Included in the workshops were 1) slide presentations designed for use in classrooms, along with a small amount of background information and numerous questions provided as printed hand-outs for teachers, 2) discussions led by a Museum instructor while looking at works of art in the Museum galleries and 3) exercises 'in looking, practiced in pairs, some of which are described in the handouts.

•**Student Programs** - A program comprised of 1) a Museum instructor collaborating with sixth grade and high school teachers to plan units of study, dovetailed with curricula, that would introduce a "method for looking" at works of art and aim to increase the students' visual literacy, 2) a period-long', in-school orientation class using slides, with discussion led by the Museum instructor, 3) a related hour-long guided visit to the Museum led by the Museum instructor and 4) a summation class in school, usually including a studio art activity, with discussion again led by the Museum instructor.

•**Saturday Classes for High School Students** - A series of two-hour discussions for high school students, offered on Saturdays mornings before the Museum opened to the public. The eight sessions in the fall were coordinated by a Museum instructor, who carefully structured each class theme to promote visual literacy by encouraging students to look, think and talk critically about ideas related to works of art in the Museum's collection. Typically, the weekly voluntary attendance of fifteen to thirty students constituted a representative sampling of New York City's diverse school population.

Treatment (see Appendix H-Figure 1: Experimental Design):

Experimental A: 28 teachers in this sample attended the Teacher Training Workshops and received the related hand-out materials. Their students, sixth-graders and high school pupils, did not participate in a Museum program. A staff assumption was that the suggestions in the printed hand-outs would be used by the teachers in their classrooms; this was neither an assignment nor was it checked in any way.

Experimental B: This sample included 66 sixth grade pupils, high school students and their teachers. Teachers attended the same workshops at the Museum as did the teachers in Experimental A. In addition, the students in Experimental B had both Museum and in-school experiences involving Museum instructors as described above.

Experimental C: This sample consisted of 21 high school students who attended the voluntary Saturday classes.

III. DESIGN AND COLLECTION (see Appendix E--Interview Instructions; Appendix F--Questionnaires; and Appendix G--Images)

Abigail Housen, Ed.D., was engaged to design and execute this study based on her own research methodology, which is described in detail in her 1983 dissertation, "The Eye of the Beholder: Measuring Aesthetic Development." Briefly, subjects in Housen's method are asked to look at a work of art and to describe what they see. This "aesthetic interview" is taped, transcribed and broken into thought units. These thought units are brief but complete ideas spoken by the viewer; they can vary from short phrases to longer sentences. Fifteen of these randomly selected units are scored by matching them with empirically-derived domains and subcategories using Housen's "Aesthetic Development Scoring Manual." By matching a remark to a domain, one can classify the viewer at an aesthetic stage. This method focuses only on verbal responses, not gestures or facial expressions.

The "aesthetic interview" was followed by three directed questions, designed to collect further information about the subject's ability to use certain common art vocabulary:

"How would you use these three words to describe this painting:
'subject'--'brushstroke'-'balance'?"

"What do you think this painting reflects about the time it was made, and why?"

And for the post-interview only:

"Turn the photograph over. What does the label tell you about the painting?"

Next, a brief written questionnaire was answered by all participants. It sought demographic, biographic and attitudinal data. Additional information was gathered by inviting school teachers to keep journals that recorded their thoughts and suggestions about the program. Museum instructors wrote summaries describing their school visits, and the 'project coordinator kept a log describing schools, students and teachers.

To measure changes in aesthetic development, all participants were interviewed twice, before and after their differing treatments, at two-and-one-half- to three-month intervals. For most, each interview required no more than twenty minutes.

Images for the interviews were chosen by education staff members in concert with Housen and project coordinator Nancy Lee Miller. For the pre-interview, Pablo Picasso's Girl Before a Mirror was used, and for the post interview, Francis Bacon's Dog. In both instances, an 8-by-10 inch color photographic reproduction was shown to the subject. Clearly, there are pros and cons regarding image selection; for example, Picasso's masterpiece depicting a pregnant female raised latent issues for students.

Education Department staff members and volunteer Education Aides were trained to conduct the interviews, which took place either at the Museum or in school classrooms. Transcription of the taped interviews was completed by Museum staff, encoding and scoring by a Cambridge team under Housen's supervision.

IV. AESTHETIC STAGE FINDINGS

Sample Profile:

The sample is representative of the teaching and student population of New York City. Teachers range in age from 21 to older than 45; most teachers were over 31. All were college graduates; of these, 13.5 percent had been trained in the arts, receiving a BFA, MFA, MSAE or Ph.D. When asked about ethnic background, 81 percent answered white, 12 percent answered black and 7 percent declined to answer. The teachers' ages suggest an experienced pool, a smaller subset of which had been trained in the arts.

The school-age sample was comprised of sixth-graders, ages 10-13, along with students from grades nine through twelve, ages 15-19. Twenty-two percent were white; 40 percent were black; 25 percent were Hispanic; 7 percent were Asian; and 6 percent, other.

Teachers' Aesthetic Stage Profile (see Appendix H--Figure 2, Teacher Stage Score: Pre-test; and Figure 3, Teacher Stage Score: Pretest and Post-test):

Pre-test interviews showed most teachers to be at Stage II or Transition II/III, but they ranged from Transition I/II to IV. Although a few teachers were experienced viewers, the majority were beginners. When we tabulated aesthetic stage with grade taught, we found that there was a relationship. Sixth grade teachers averaged at Stage II; ninth grade teachers, Transition II/III and II/IV; high school teachers, Stage III and Transition III/IV. This pattern appears to be directly related to training: The high school teachers tended to be art specialists.

In general, the teachers' post-test interviews show little change in aesthetic stage, regardless of treatment. The exception to this, however, was the teachers who pre-tested at Stage III or higher; these people showed significant increases post-test.

Students' Aesthetic Stage Profile (see Appendix H--Figures 4-6, Students: Experimental A, A and E Stage Scores: Pre-Test and Post-Test; and Figure 7, Students: Stage Gain by Group):

Experimental A: Pre-treatment stage scores show Experimental A sixth-graders and high school students distributed among Stages I, Transition I/II and Transition II. Thus, more than one-third were at the same stage as the majority of their teachers. There were no significant gains in stage between pre- and post-treatment interviews.

Experimental B: The aesthetic stage scores of this group, Stages I and II, were nearly identical to those in Experimental A. Again, these students' stages overlapped with their teachers'. While the post-test stage differential was insignificant, graphically there appears to be a slight shift in the expected upward direction.

Experimental C: This group's pre-test scores, Transition Stage I/II through Transition II/III and II/IV, are higher than the previous two groups. Their post-test scores fell within Stages II to Transition II/III, a significant increase over other students in the study.

Staff/Expert's Aesthetic Stage Profile (see Appendix H--Figure 8, Stage of Staff and Experts):

Museum staff and experts ranged from Transition Stage III/IV to V. A comparison of the aesthetic stage of teachers with that of MoMA staff and experts shows little overlapping.

Control's Aesthetic Stage Profile (see Appendix H--Figures 9-10, Controls' Stage Scores: Pre-test and Post-test):

The student control group scored heavily in Stage I, less so in Stage II, on both the pre- and post-tests. Left alone, these subjects demonstrated no growth in aesthetic development. The teacher control group ranged between Stages I/II and IV on the pre-test, and between Stages II and IV on the post-test, with most scoring at Stage II.

V. FINDINGS

DISCUSSION OF AESTHETIC STAGE

Clearly, the most striking finding is that the teachers showed no significant change in aesthetic development, despite the intent of our program to make them effective as museum educators. Another significant finding relates to the relative distribution of student, teacher and staff stages: The students were beginner viewers--about one-third reached Stage II; only the Saturday students were higher than Stage II. Most of the teachers, too, were beginner viewers--about two-thirds scored between Stages II and Transition II/III. On the other hand, about one-third of the staff fell within Transition III/IV and two thirds fell between Stages IV and V. The stages of students and teachers overlapped; those of teachers and staff did not.

The Museum program assumes that effective transmission of information from staff to teacher to students is possible. These findings question whether or not critical concepts can be clearly transmitted across sets of people with dramatically different capacities to understand aesthetic issues. Indeed, is it possible to main an intermediary? And, if so, what kind of and how much training is required? At what stage does a classroom teacher need to be to become an effective museum educator?

Both these findings and the questions raised need to be carefully considered in the context of this study. The MoMA program was originally designed to increase visual literacy, not to produce aesthetic development stage change. While related to visual literacy, aesthetic development is distinctive from the acquisition of new visual literacy skills. Also, when the study was initiated, we could not describe our goals precisely, and therefore we could not know how to structure content, method and vocabulary in order to achieve the desired outcome for viewers.

Other studies show that stage change is a very slow process, usually requiring more than the three to six months of training in the program's examined here. The transition from Stage II to III is especially difficult, because it involves the accumulation of art historical and critical data, neither of which were emphasized in these programs. In addition, there seems to be an age threshold related to stage III: Viewers who have achieved Stage III or higher have passed through their adolescent years.

The stage change among teachers who were over Stage III, as well as that among the Experimental C students (who started at a higher stage

than the others), raises other questions: Is there something about the curriculum that is especially effective at higher stages? Does the curriculum work only on subjects who have reached higher stages and who choose to become more deeply involved? Is stage change at higher levels more a matter of additional viewing experience than of any curriculum? Note that all the teachers who worked on the optional journals were at Transition Stage III/IV or over; the students who elected to come and who remained in the Saturday program were at a higher stage than the school program students. Although these data preclude conclusive inferences, it is interesting to speculate whether or not the reported stage changes related to the intensity of the program, or to the stage of the learner upon entering the program, which may have enhanced his/her cognitive receptivity. Thus, these subjects may have a different attitude and interest level, or a combination of these. If the programs remain as constructed, does the stage of the learner have to be above some crucial threshold of ability and/or interest to develop?

VI. PROGRAM IMPACT ON BEHAVIOR AND ATTITUDE (see Appendix H--Figures 11-12, Teacher and Student: Program Satisfaction; and Figure 13, Student Use of Passes)

Responses to the questionnaires suggest that participants both learned from and developed positive attitudes toward the program. However, we found differences among the three student groups in their ability to articulate program content. Of Experimental C, 62.5 percent could articulate what they liked, compared to 47.8 percent of Experimental B and none of Experimental A (since A students had no program). Of Experimental C, 87.5 percent, and of Experimental B, 82.6 percent could describe the program with accuracy, compared to 20.6 percent of Experimental A. And, 100 percent of Experimental C could state what they were learning, compared to 56.5 percent of Experimental B and 17.2 percent of Experimental A. Further, all of Experimental C, 34.7 percent of Experimental B and 10.3 percent of Experimental A appeared to demonstrate visual literacy skills. Experimental A and B teachers were articulate about program content. One indication of the difference between the two teacher experimental groups and the control group was that none of the control exhibited a functional command of visual literacy skills.

After the Teacher Training Workshop, one teacher summed up her learning experience with these remarks:

"...I think that before I took the course, I kind of looked down on modern art in the sense that...I think I valued things at the Met more. I just felt ... if I don't understand it, I don't like it. It was probably a very ignorant viewpoint.... Also, I'm not in art, and I was with a lot of art teachers and I learned a lot from them.... When they started to analyze a painting, then I could see that what I would look at and say, "There's no meaning here," I [did]n't know what's going on. They really brought a lot to that painting. And then I could understand what was going on and I could see it wasn't somebody slapping paint haphazardly on the canvas but that there's more to it. And I felt more respect for it."

A sixth-grader in Experimental B put it more simply:

"You have to look at it really good to figure out a lot of things. I got a lot more thinking out of it."

Only a few subjects out of the entire population expressed any dissatisfaction with the program, even when their stage number decreased in the post-test responses. However, while increase in satisfaction with the program did not vary significantly by group, satisfaction appears greatest for Experimental C, followed by Experimental B.

The more important question is, Did attitude translate into behavior? Because many teachers were suspect about modern art, attitude was one of the initial variables of concern to the Education Department. Satisfactory information about this variable remained elusive for several reasons. A key Indicator might be the use of free passes. (Available to all New York City public high school students, as well as to younger students in the study, these passes allow unlimited visit; to the Museum.) Use of the free student passes differed significantly by group, despite the fact that almost all subjects voiced approval of the program. Appendix H--Figure 13 shows that Experimental C (Saturday students) used the passes most frequently. Unfortunately, because close monitoring of distribution was impossible, it is unclear the extent to which the other students were aware of pass availability. Furthermore, this finding has some limits as a measure of attitude, because travel to the Museum might have been an obstacle for students living outside Manhattan, as it certainly was for sixth-graders in general.

An even more fundamental question is the relation between attitude and aesthetic stage theory. Implicit in this theory is the view that the subject's aesthetic stage can influence viewing experience. If aesthetic stage theory can predict behaviors for certain circumscribed activities, it may also predict attitudes toward those same activities, such as higher-stage students making greater use of passes. With this in mind, the interpretation of attitudinal responses becomes most complex.

VII. VISUAL LITERACY FINDINGS

An analysis of the responses to visual literacy questions by stage shows (for reading clarity, mostly student responses are quoted here; please note that teacher responses are not dissimilar to these):

A majority of both students and teachers appear unfamiliar with the commonly used terms "balance" and "brushstroke," although they seem clearer about "subject."

Stage I participants had no precise working definition of how to use these words when discussing a work of art.

Stage II viewers learned how to uncover the meaning of these terms generally by connecting the words to process or technique.

A majority of participants understood only the rudiments of how a painting relates to a time period.

Subject

Sixth-graders at Stage I, when asked to define "subject," most often responded with a simple list:

"two people"
"a dog"

or a story-like description:

"lady hanging up picture of boyfriend"
"saying goodbye, going to battle"
"dog is growling at someone, needs help"

High school students, also at Stage I, responded similarly with a brief statement or story:

"ladies greeting each other"
"stray homeless dog"

Sixth grade pupils at Stage II began to understand "intentionality" of subject, that the artist created his/her artwork to convey a message, to communicate:

"The subject is what gives. it meaning." "[It should] be titled like 'A Lost Dog.'"
"[It] shows people different but the same."

High-schoolers' remarks differed only in that they included more abstract concepts.

Brushstroke

A majority of sixth-graders at Stage I were unfamiliar with the term "brushstroke" and answered:

"never heard of it"
"hair goes down here"
"brushing in a mirror"
"hairbrush"

So, too, were most high-schoolers, as illustrated by the response **"hairstrokes,"** although others began to connect the word to the act of painting, variously defining it:

"painted colors"

or describing technique:

"they made lines"

and process:

Some teachers' comments indicate that even they struggled with the term "brushstroke":

"[do] not think of it"

"top is more intense versus the lighter"

"top symbolizes the beginning, bottom the ending"

"smooth"

"Balance"

Many sixth-graders and high-schoolers alike at Stage I **"didn't know"** the artistic sense of the word "balance." Others applied the word to actual or fictional elements within the picture:

"she is balancing an egg"

"balancing her hands high"

"balancing the mirror"

calling up any association ("**weighs,**" "**costs**"), resorting to categorical remarks about the presence or absence of the term ("**it is or it isn't**") or using vague language ("**has some,**" "**the middle,**" "**good**"). Still, others tried to use the term very concretely:

"picture is crooked"

"shapes are different"

"levels are up and down"

"something in the shape of the picture, not lopsided, straight, level"

Some high school students saw color as a concrete way to approach this term:

"colors equal out"

"he uses color, lots of color ... one part's

blue, the other orange"

"middle is balanced"

Sixth-graders at Stage II were still confused, but some could begin to articulate their thoughts:

"looks uneven and wobbly"
"balanced but light against dog, stands out"
"even, half abstract and half realistic"

The high school and sixth grade pupils at Stage II based their concepts of balance on technique, how--and how well--the work was done:

"well balanced"
"even considering you have basically all the colors equally balanced"
"made a mistake on carpet or something"
"balanced"
"has perspective--good in center except for black spot"
"perfectly balanced--symmetrical"

A Saturday student saw the dynamics of balance:

"[the work does] not look balanced because the black interferes with red."

Time (Context):

When asked how they thought a painting reflected the time at which it was made, subjects had to extract significant features from the work of art to make a connection between those features and a historical period. A patchwork understanding of history, combined with unfamiliarity with the fundamentals of art and artmaking, make this a very difficult task. Many Stage I sixth-graders admitted that they **"did not know."** Others said, **"looks modern," "long ago," "old long time"** (which may mean in the "past"), **"three years ago," "back then, '60s,"** or as long ago as the **"1900s,"** or the time of the **"Renaissance," "Arab," "Egyptian," "probably 1913," "B.C.'s," "Michelangelo."**

Both sixth-graders and high school students tried to answer the question about time by telling a story. One sixth grade pupil said:

"[It was a time when] everyone loved each other."

Another explained.

"It is about a girl being a mother...[she] was married from a different culture and [got] pregnant and [is] supposed to look in mirror."

A teenager remarked.

"[The] dog got locked up at night."
"People don't like dogs."

Another inferred

"old days, like Europe ... [when there was] not enough food and [people were] starving"

Searching for very concrete explanations, sixth grade pupils noted:

"time of day"
"night"

or that the work was **"real colorful."**

These explanations appear very idiosyncratic:

"ancient [times] used to do things like this ... to do signs, they'd mean something religious"
"old because back then the artist didn't know nothing...probably they drew pictures, but hardly nothing ... they hardly drew animals"
"old rug, looks old and worn"
"old because the floor is plain"
"not now, dogs wear shirts"

Although sixth-graders at Stage I could read, many misinterpreted the information on the label. One, for example, said:

"This picture was made in 1909 and it's a dog, and I think the dog was born in 1952, and, umm, the painting [is] partly made of oil and it's made by William A. M. Burden and it was for the fund."

Another replied that **"they found the dog.... Dog born in 1952."**

High school students at Stage I were equally hard-pressed to apply the information from the label. One supposed the artist to have been **"born in 1909 when there were a lot of painters."**

At Stage II, the sixth-graders could interpret parts of the label, although most had difficulty with the word "fund." High-schoolers seemed more able to interpret label information. For example, one student construed from the date that the painting was done **"after the war."**

By Transition Stage II/III, the Saturday students drew inferences from the label. Asked "What does the label say?," one answered:

'Ummm, that it's done in oil and the painter was Francis Bacon, born in Britain in 1909, and this painting was done in 1952. O.K., so it was modern ... I was right...and that's it.... Oh ... this was around World War 11, maybe a couple of years after that ... so I don't know. It could have something to do with, umm, the apocalypse, because this is a dog attacking something, so that could maybe represent the Nazis or something.'

VIII. DISCUSSION OF VISUAL LITERACY FINDINGS

Although the study is still in progress (see "Afterword"), first-year findings have informed us about the school constituency. The aesthetic stage model, moreover, has provided a map for analyzing the responses to specific questions about aspects of works of art, enabling us to uncover an emerging grasp of observational skills, analytic methods, interpretative faculties and related vocabulary. The findings suggest changes in program structure and content. Typically, age and cognitive level are correlated. These findings also imply a relationship between age, cognitive level, aesthetic level and readiness for visual literacy learning. The ability to comprehend visual literacy skills and concepts is enhanced when students move from concrete operations to formal operations (Piaget's stages). For example, fifth- and sixth-graders are typically about to enter the formal operations phase; therefore, we might de-emphasize the importance of time, a very abstract concept, in their curricula. These same students, however, could entertain the more concrete understanding of "brushstroke" with relative ease.

As students move from Stage I to Transition II/III, their understanding and use of visual literacy terminology appears to become more differentiated and appropriate. Learners at Stages I and II have only begun to conceptualize visual literacy vocabulary, such as, "balance" and "subject." Those at Transition Stage II/III (such as Saturday class students) grasp those components more quickly and in greater detail. Clearly, aspects of balance, label information and subject can be grasped at each stage. At Stages I and II, we see only an initial grasp of these ideas, but at Transition Stage II/III and above, there appears to be a threshold at which visual literacy skills and concepts are quickly understood. Further research might provide a map indicating which aspects of visual literacy can be assimilated and when, and how best to teach those concepts and skills.

Creating a visual literacy "source book" and cataloguing remarks by stage and grade would show the range of understanding of visual literacy by students and teachers at different ages and stages. The source book could lead to improved visual literacy curricula.

X. IMPLICATIONS FOR KNOWLEDGE TRANSMISSION (see Appendix H--Figure 14, Overlap in Aesthetic Stage Between Groups; and Figure 15, Transmission of Knowledge):

The Museum instructor taught the visual literacy curriculum to a group of school teachers, who were, in general, beginner viewers. The teachers in Experimental B taught what they had learned to their students, some of whom were at a lower stage, some at the same stage and others at higher stages than the teacher. The information had to travel two plateaus beyond its original source, the Museum instructor. The teacher, as both recipient and messenger, had to engage in a kind of language translation requiring him/her to 1) understand, 2) translate and 3) convey the Museum instructor's message to the next recipient, the student. The Museum instructor had to present the information appropriately for the intermediary, the classroom teachers, and for the final destination, the students.

In the absence of substantial stage overlap between teacher and Museum staff, receiver problems (flawed reception) are likely--the listener's aesthetic stage is not high enough to enable him/her to understand the sender. Greater overlap in stage between students and teachers creates transmitter problems--the sender's stage is too low to challenge the listener's thinking. The only group to have gained in stage, Experimental C, demonstrated neither receiver nor transmitter problems. Thus, we can assume that teaching and learning were most effective in the absence of such problems.

X. CONCLUSIONS

Our findings suggest that refinement of the design and transmission of information and materials must, in the future, include sequenced curriculum that is appropriate to both stage and transmission level. Although few of the subjects in this sample comprised the higher end of the aesthetic stage spectrum, they, too, engaged in aesthetic activity. If we are to understand the aesthetic response, we must focus not only on the highly developed aesthetic activity (achieved now by only a few), but also on the naive aesthetic response, with all its attendant difficulties, that is experienced by the many novices. This distinction must be the focus of evaluation studies in museums.

From these findings, one might conclude that educating beginner viewers is too difficult a task, leading only to aesthetic confusion. But, to the contrary, we believe that these data reveal new insight into the differences among individuals, the subtle, yet discernible shifts in their understanding of aesthetic concepts. Having acknowledged and identified these gradations, museum staff can tailor teaching to them. Ultimately, this kind of mapping, if accompanied by innovative teaching curricula, could affect the thinking of museum audiences. We have uncovered a way to index visual literacy that suggests a much more powerful way to structure educational programs.

XI. COMMENTARY AND RECOMMENDATIONS

Future educational programs in the Museum might consider the following issues and guidelines:

Design Issues:

1. Increasingly, museums are developing programs in collaboration with school and community professionals. Imbedded in the design of these programs must be a recognition of the participants' levels of aesthetic understanding. Distortions based on the interpretation level of the teacher must be taken into account in programs that require communication channels with a two-step knowledge transfer, from A to B and from B to C.
2. When a channel of communication entails teaching teachers to teach, communication problems may arise. Museums must ensure that the intended message gets through in the intended form to the designated audience. Children and adolescents have a distinct way of interpreting art that is likely to evolve over time; museums must use its channels of communication to lay the groundwork for a fuller comprehension of art that may not completely mature until adulthood.
3. Teachers who are be inner viewer may have difficulty teaching their students about art. Transmitting recently acquired information is often difficult, because the information may be so new that it is not fully absorbed or processed. Or, it may be difficult to teach people at one's own stage because one's understanding may not exceed that of the students'. Furthermore, it may be difficult to understand a teacher several stages higher than oneself.
4. A program must have certain attributes to attract and retain diverse students. Program recruitment and retention should match the aesthetic stage of the learner.
5. Visual literacy materials should be sequenced. The visual literacy findings and the aesthetic development scoring manual can help to provide guidelines for tailoring programs to fit the needs and interests of visitors.
6. Aesthetic learning takes time.

Program Guidelines:

1. Techniques like the aesthetic interview can be used to assess the viewer's mode of interpretation pre- and post-treatment.
2. Treatments can be designed with viewer level in mind.
3. Visual literacy curricula can be tailored to aesthetic stages. The more abstract components can be targeted toward higher stages and toward older people.
4. Classroom materials should be designed with understanding of the aesthetic levels of both teacher and student. Beginner teachers need structuring, specification and brief exercises using skills they have honed, such as observing, comparing, contrasting and reflecting skills. Treatments must be more intensive and individualized for higher stages.
5. Programs need to be more intensive, last longer and include sequenced materials.

XII. AFTERWORD

Year II Study (1989/90):

Begun in Fall 1989, the second year of the study focused on the effects of varying Education Department core programs by:

Doubling the amount of training offered in the Teacher Training Workshops, specifically, increasing from four to eight two-hour sessions.

Providing a Museum lecturer as a "mentor" in the classroom so that the classroom teacher, who takes primary responsibility for both in-class and in-museum discussion with their students, was assisted by a Museum instructor present for support as needed during planning and execution of classes.

Examining the use by classroom teachers of the slides and printed materials offered as part of the Teacher Training Workshops.

The sample of approximately 60 middle school teachers and 100 sixth graders was again drawn from New York City public schools. To understand more about long-term learning in the visual arts, 15 high school students who participated in Yew I (Experimental B) of the study were interviewed once again.

Collection of data was completed in June 1990. Findings and conclusions will be available in Spring 1991, followed by a final report in Summer 1991.

Year III Study (1990/91):

The design for this study, which was begun in Summer 1990, varies in that the sample includes fifth through twelfth grade teachers from suburban public schools, along with those from New York City, and the students are fifth-graders from a New York county public school. The program studied is one offered by MoMA, in collaboration with the Lincoln Center Institute, in which both the teacher training and in-school components are greatly expanded beyond treatments in Years I and II. Included are a three-week, multi-arts summer workshop for first-year participating teachers (this curriculum integrates the study of visual arts with dance, music and drama) and week-long visual arts workshops for teachers returning for second- or third-summer experiences. The in-school segment is expanded to include six to twelve one-hour sessions, depending on the school district's contract with Lincoln Center Institute, and a museum visit or optional use of an art portfolio in the classroom. Collection of data Will be completed in Spring 1991; a final report will follow in January 1992.

APPENDICES (Appendices D through I not included here)

- A . Stages of Aesthetic Development**
- B. Tools of Visual Literacy (1988)**
- C. Description of Sample Population**
- D. Program Descriptions and Hand-Outs (1988)**
- E. Interview Process**
- F. Questionnaires**
- G. Images**
- H. Figures**
- I. Excerpts from Aesthetic Interviews**

APPENDIX A

STAGES OF AESTHETIC DEVELOPMENT

At **Stage I - Accountive** viewers are story-tellers. Using their senses and personal associations, they weave concrete observations about the work of art into a narrative. Here, they base judgments on what they know and like. Emotions color their comments as the viewers seem to enter the work of art and become part of the unfolding drama.

At **Stage II - Constructive** viewers set about building a framework for looking at a work of art, using the most logical and accessible tools: their own perceptions, their knowledge of the natural world and of their social, moral and traditional world. If the work is unconventional--if craft, skill, technique, hard work, utility, function are obscure -- if the tree is orange instead of brown -- if themes of motherhood have been transposed into wars on sexuality -- then, this viewer discounts the work, deems it "weird," lacking, and of no value. As emotions begin to go underground, this viewer begins to distance him and herself from the work of art and to develop an interest in the artist's intentions.

* (see Transition stages II/III and III/IV)

At **Stage III - 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 surface of the canvas for clues, using their vast library of facts and figures. Properly categorized, the work of art's meaning and message can be explained and rationalized.

At **Stage IV - Interpretative** viewers seek a personal encounter with a work of art. Exploring the canvas, letting the meaning of the work slowly unfold, they appreciate the subtleties of line and shape and color. Now, critical skills are put in the service of feeling and intuition, as these viewers let the meaning of the work - its symbols - emerge. They know that the identity and value of the work of art is subject to chance and change, that each new encounter presents a chance for new comparisons, insights, and experiences.

At **Stage V - Re-creative** viewers, having established a long history of viewing and reflecting about works of art, now "willingly suspend disbelief." A familiar painting is like an old friend: known intimately, yet full of surprise and needing attention on a mundane level as well as on an elevated plane. In all important friendships, time is a key ingredient. Knowing the ecology of the work -- its time, its history, its questions, its travels, its intricacies -- and drawing on his or her own history of the work in particular, and with viewing, in general, allow this viewer to combine a more personal contemplation with one that more broadly encompasses universal concerns. Here, memory infuses the landscape of the painting, intricately combining the personal and the universal.

•**Transition Stage II/III** - The ways in which viewers approach Stage III vary. The principal feature of the Transition stage II/III viewer is the development of a basis for decoding the structure of patterns within the work of art. He/she begins to fashion a simple analytical framework for classifying aspects of the art object. This framework can arise from a variety of distinctions, some historical (such as historical names and schools of art) and others pertaining to formal properties of the work (such as shapes, colors, lines and techniques). This becomes the means by which the viewer can classify, label, sort, catalogue, make comparisons, weigh evidence and come to conclusions. Eventually, these decoding strategies allow the Stage III viewer to do his/her analytical work. In this orderly search for clues, three phenomena are needed. 1) analytical capabilities, 2) critical skills, and 3) an analytical framework.

•**Transition Stage II/IV** - The viewer with inconsistent or uneven exposure to the arts invents his own distinctions. Some II/IV viewers have good analytical skills and are accustomed to decoding symbols; however, these viewers lack a specific aesthetic framework in which to fit their analysis. Usually such a framework is acquired through either formal arts training or extended viewing experience. Other viewers have good technical and formal knowledge but either lack critical or analytical thinking skills, or an analytical framework. In any case, Transition II/IV viewers are unable to assimilate the distinctions required for formal analysis of a work of art

APPENDIX C

DESCRIPTION OF SAMPLE POPULATION

DESCRIPTION OF SAMPLE POPULATION - YEAR 1 (1988/89)

TEACHERS

67 New York City public school teachers, including high school specialists and classroom generalists at the 6th grade level. From this total, the following categories were identified.

28 teachers participated in a 4-session training workshop held during a 5-week period of time at the Museum. (Experimental A)

17 teachers participated in a 4-session training workshop held during a 5-week period of time at the Museum and with their students participated either the Museum's High School or Middle School Program. (Experimental B)

24 teachers did not participate in any of the Museum's School Programs. (Control)

STUDENTS

173 New York City public school students, including 6th graders and 9th through 12th graders. From this total, the following categories were identified:

52 students were taught by teachers who participated only in a training workshop; students did not receive the Middle or High School Program. (Experimental A)

49 students were taught by teachers who participated in a training workshop and students received either the Middle School or High School Program.

21 high school students volunteered to attend some or all of the Museum's 10 session, noncredit, free-of-charge Saturday Morning Classes during one semester. (Experimental C)

51 students did not participate in any of the Museum's School Programs. (Control)

EXPERTS

11 Museum staff members (curators and educators) were asked to participate in the same interview process.

Note: 253 participants were interviewed once; of these, 167 participants were interviewed a second time. The reduced number reflects students who moved, dropped out of school or were ill, experts who were interviewed only once, and, occasionally, mechanical problems such as equipment failure.