

## **Highlights of Findings – San Antonio**

### *Aesthetic Development and Creative and Critical Thinking Skills Study*

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This summary will share some of the highlights from the study conducted from Winter 2000 through Spring 2002 by Visual Understanding in Education with the support of the San Antonio Independent School District (SAISD), Artpace, and the San Antonio Museum of Art. The study was designed to measure the impact of the multi-year Visual Thinking Strategies (VTS) program on students in grades three through five.

VTS is a student-centered curriculum in which students examine and discuss works of art, prompted by questions selected to support careful, evidentiary looking. The three basic VTS questions are: “What’s going on in this picture?” “What do you see that makes you say that?” when an interpretative comment is made, and “What more can we find?” Classroom teachers facilitate the discussions by asking the questions, pointing, paraphrasing and linking responses. There are ten lessons each year, the last of which is a museum visit.

Data was collected twice a year for three years, before the first yearly VTS lesson and after the last VTS lesson of the year, to follow the growth of aesthetic and more general critical thinking skills of an initial sample of 25 experimental and 25 control students. Pre- and post-VTS aesthetic development interviews (ADIs), demographic questionnaires, museum biographies, material object interviews (MOIs), and writing samples were collected from experimental and control groups.

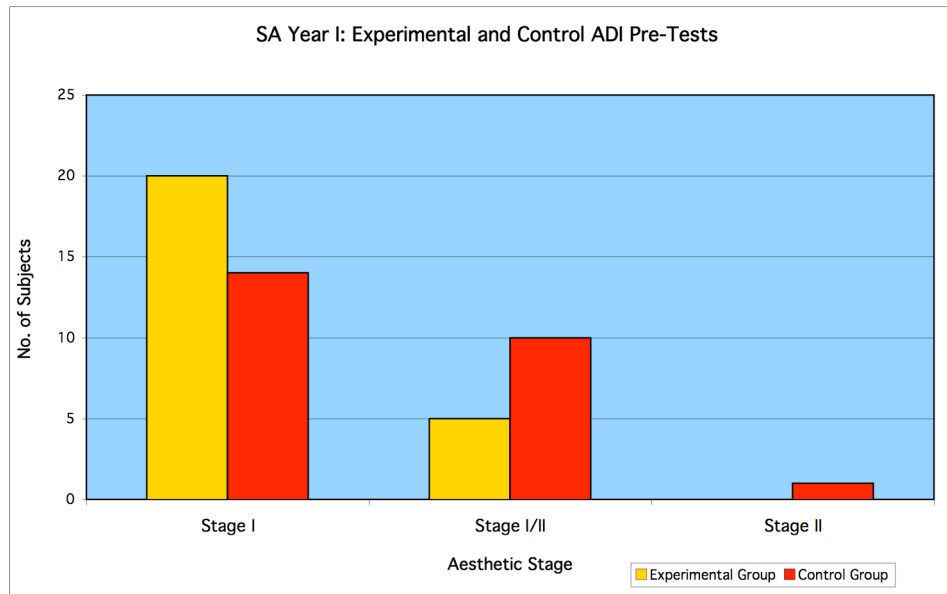
Primary questions were: Would the experimental students, an “at risk” population of low income, largely Hispanic students show a steady increase in both aesthetic as well as critical thinking skills? Would these skills transfer to material (non-art) objects and writing samples?

One of the criteria for an “at risk” designation by the SAISD is Limited English Proficiency. Other criteria include not passing a math and reading readiness test given up to grade three, or not passing statewide assessments. In Year I of the study 81% of experimental students identified themselves as Hispanic, 18% as African American and 3% as Anglo; 23% of the experimental student writing samples were in Spanish. At the end of Year II we learned that over 85% of the

experimental students were labeled “at risk”; in Year III all experimental students were labeled “at risk.”

## 1. Aesthetic Development

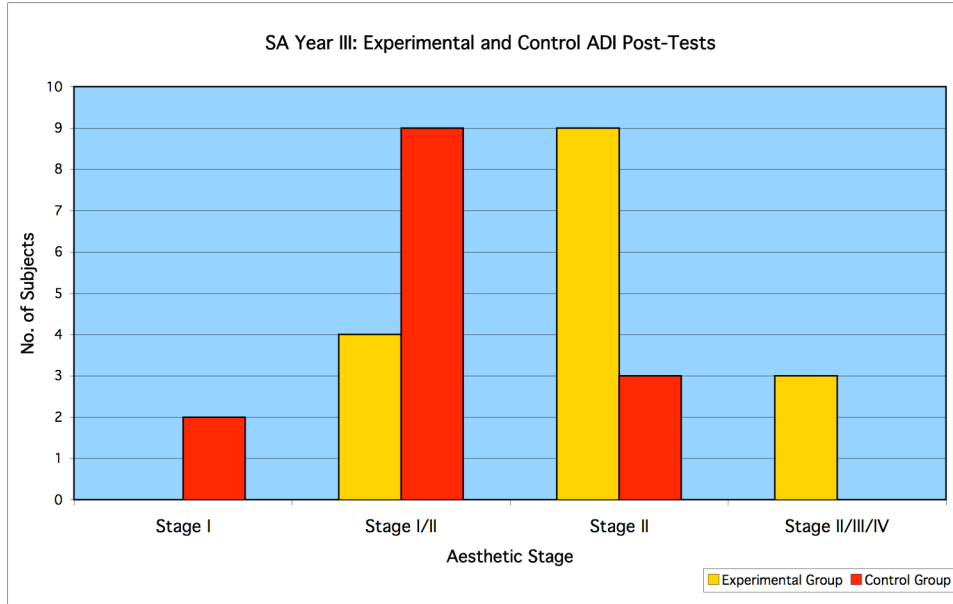
We began Year I with significant differences in pre-test aesthetic stage<sup>1</sup> scores between our demographically matched sample of experimental and control students - the control group begins the study with more students at higher stages.



However, by the end of Year I experimental students showed significant gain in aesthetic stage scores - almost half of the experimental students had moved beyond Stage I, compared to less than a third of the control students. This steady growth continues: by the end of Year II all experimental students have moved beyond Stage I and there were almost twice as many experimental students in Stage II. In the Year III post-test we see ongoing, statistically significant ( $p < .005$ ), aesthetic growth in the experimental group: four times as many of the experimental students are at Stage II, II/III, or II/IV compared to the control students.

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<sup>1</sup> Housen, A. The Eye of the Beholder, Measuring Aesthetic Development, Ed.D dissertation, Harvard University, 1983



## 2. Critical Thinking

In addition to aesthetic growth, teachers and researchers observed the emergence of critical thinking skills (CTS) in the experimental group beginning in Year I of the program. We did not, however, find a significant difference between experimental and control students in CTS until Year III. In our analysis, ADIs, MOIs, and writing samples are coded for signs of critical thinking using the following criteria:



Image: Picasso, *Girl Before a Mirror*

Excerpts are taken from Aesthetic Development Interviews, non-directive commentaries by students talking about the image above.

Supported observations – remarks that back up a statement with evidence.

“And one, the girl that has long hair looks like she’s crying ‘cause she has a little tear on her face.”

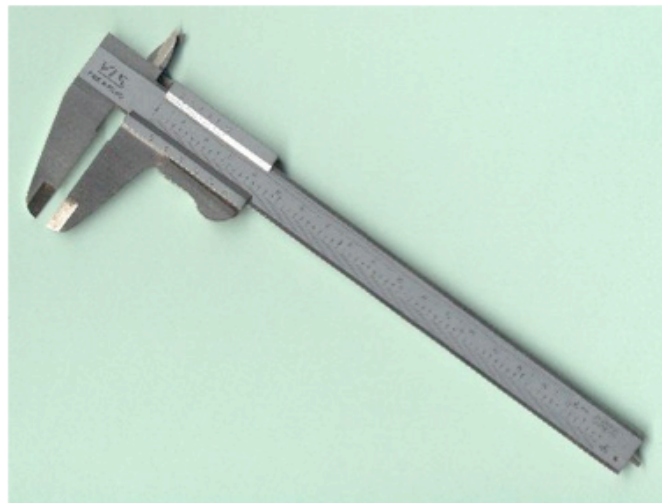
Speculations – remarks that include an implicit or explicit awareness that the view is a guess, opinion, supposition, or conjecture.

“Maybe when the artist was drawing this, was painting this picture she was, the artist was probably sad because the expression on this person’s face.”  
(With supported observation)

Elaborations or Revisions – remarks that revisit and expand upon earlier observations or comments

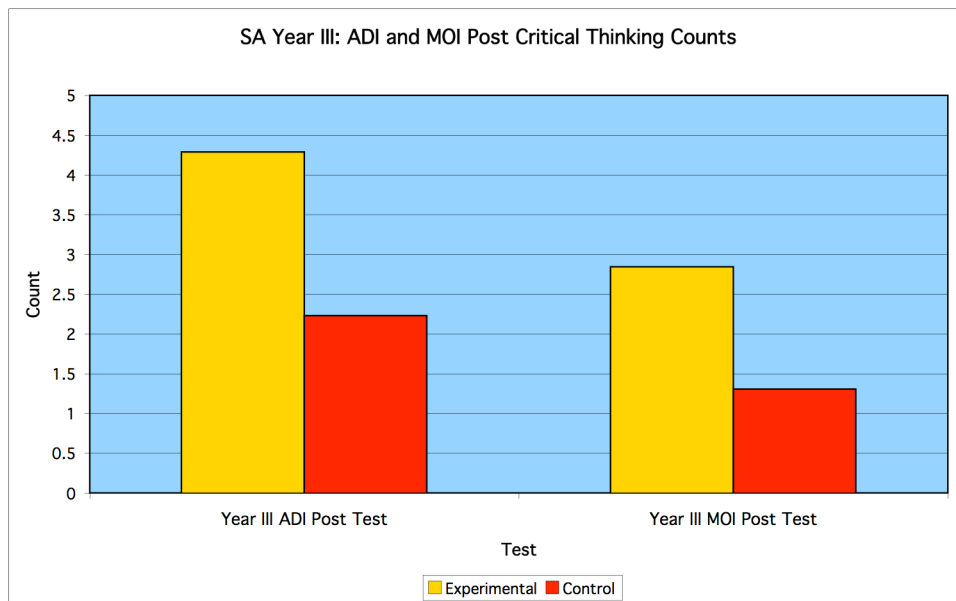
“I think this is a woman who is looking in the mirror and maybe she’s imagining herself in, like a, she’s getting ready to go, to a nice fancy party and maybe she can’t go ‘cause she doesn’t have anything to dress up in. Maybe she’s imagining herself dressing up.” (With speculations and supported observations)

The following example of critical thinking is from a student’s material object interview of a caliper (image is not the actual caliper used).



“It’s maybe like a ruler, and this part grabs on to stuff. This is probably old, because it has rust. Maybe this is a part to like get something out of a little place. Maybe this [sliding?] part might make it go up and down. It has inches and centimeters. This may be a tool to use for wood.” (Supported observation and speculations)

In the Year III pre-tests, we found a difference between the experimental and control groups in terms of critical thinking counts in both aesthetic development and material object interviews. We find this growth in CTS worth noting as 41%, less than half, of our experimental students are at aesthetic Stage II. In other studies the relation between students being at Stage II and an increased use of CTS has been important – in the Year III pre-tests we saw this growth emerging earlier. In the Year III post-tests, the critical thinking counts in both ADIs and MOIs is significantly greater in the experimental students when compared to the controls (ADIs  $p < .04$ , MOIs  $p < .003$ ).



The writing samples could not be tested for statistical differences as we had too few items for analysis. We include one sample from a bilingual student in study Year II as an example of critical thinking skills in student writing with examples of supported observations underlined (sample corrected for spelling).



Image: Picasso, *Family of Saltimbanques*

“The man in the red dress is dressed like Santa Claus and he looks like him 'cause he is fat like Santa Claus. The one that doesn't have clothes he should be tired 'cause he's carrying a big can on his shoulders and he doesn't have any shoes. The little boy, it's the big brother 'cause they have the same face and the same hair 'cause they're together. The one by Santa Claus he looks like an Indian 'cause he has the same clothes like that and they make the clothes with their hands. The little girl has something in her little basket. The lady doesn't care about nothing 'cause she is just sitting down like she's the boss.”

### 3. Conclusions

By the end of the study, the differences between San Antonio students who had participated in VTS and those who had not were significant. Even though the control students started out ahead, the experimental students significantly outperformed them in both aesthetic and critical thinking growth. Experimental students transferred critical thinking skills, such as supported observations and speculations, fostered by VTS discussions about art to their individual art-viewing experiences—independent of the group or a teacher. They also transferred critical thinking skills fostered by VTS discussions about art to individual viewing experiences of non-art objects. It is interesting to note that we did not find transfer of critical thinking skills to non-art objects until students were transitioning to

Stage II in aesthetic understanding – the importance of extended, regular art viewing experiences is apparent.

Being “at risk” and coming to school speaking a language other than English did not interfere with San Antonio VTS students’ development of critical thinking strategies. They clearly demonstrated steps in the process of learning to learn. VTS, which mirrors and strengthens best practices for teaching “at risk” and Limited English Proficiency students, supplies a missing component needed in schools. The data convinced the San Antonio Independent School District to implement VTS system-wide.

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