

Detroit Research on the Institute for Arts Infused Education Model

Marygrove College Institute for Arts Infused Education believes that the arts are transformative tools for engaging all learners. The Institute improves educational achievement, creates innovative models for teaching and learning, and promotes the systemic integration of the arts into the K-12 core curriculum. This methodology creates learning communities in which students, artists, and teachers are agents of positive change.

Two studies have been done to date in Detroit on the effectiveness of the Institute's Model:

In 2009, a study was done authored by Mary Lou Greene, Marygrove College, and Dr. Shlomo Sawilowsky, Wayne State University. A reading pretest and posttest was developed from November, 2008 through February, 2009. It is based on the 3rd grade Dolch vocabulary. The instruments were constructed based on the blueprint approach to test construction. Teachers from the five elementary schools participated in developing the test blueprint, where each topic was sequenced and then broken down into sub-competencies. The teachers weighted the importance of each entry in the blueprint. Next, a table of specifications was used to assign the cognitive level to each skill (i.e., recall, application, problem solving). A task analysis was completed to differentiate prerequisite and enabling skills from the sub-competencies, of which only the latter appear on the test.

A 250 word vignette serves as the reading stimulus. Responses were created as test items in multiple choice, fill in the blank, and matching formats. Fifteen of the items assess the cognitive reading skills, and the remaining two items pertain to the affective domain (e.g., students' feelings regarding reading), for both the pretest and the posttest. A paired samples t test was conducted to confirm the post test scores were statistically significantly improved based on the AIE intervention. The obtained t was 9.46, $df = 167$, $p < .000$. **The estimated effect size (a measure of the strength of the intervention) was .88, which Cohen (1988) identifies as a "large" treatment effect. Thus, the AIE intervention has brought about a huge difference in students' mastery of the 3rd grade Dolch vocabulary.**

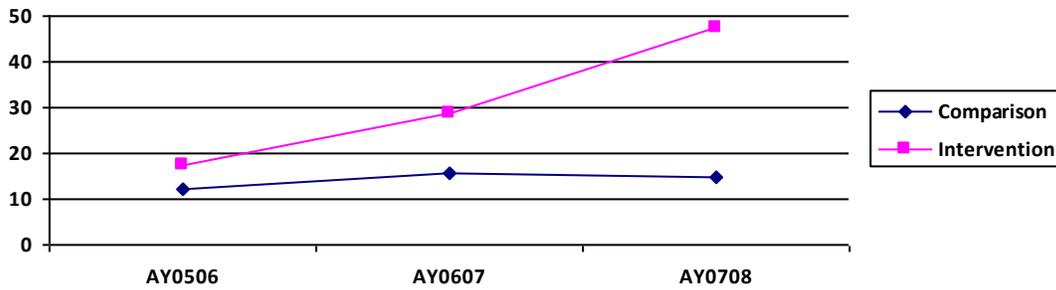
From 2006-2008, our first research study was undertaken by SPEC Associates. Their report includes the following:

Overall, the most promising results are for the lowest scoring students on RND, LNG, and SCI. The program effect for students who score below the mean at baseline is less promising, however. The small sample size places limitations on the analysis that can be conducted and the stability of the results. Results should be used only for descriptive purposes and not to make inferences to a larger population or policy related decisions.

RND Category 1: Lowest scorers – significant differences found

The program groups shows significant improvement over the years (both lines have significant slope) where the comparison group does not show improvement over the years (its line is flat). However the difference between the groups (i.e., the distance between the lines) is significant for AY0506 ($p=.06$) and AY0708 ($p=.06$). Even though cases were removed in order to make the means equal at baseline (AY0506) the groups remained significantly different. Given the magnitude of difference at 0708, it would be difficult to not attribute this improvement to participation in AIE.

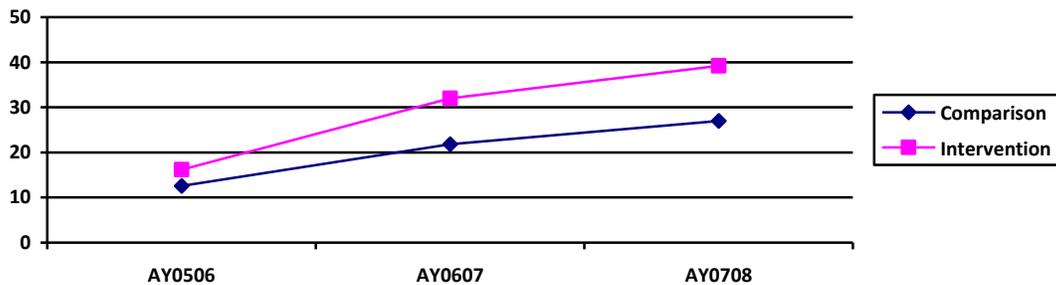
Category 1: Lowest scorers	N	AY0506	AY0607	AY0708
Comparison	4	12.0	15.5	14.7
Program	4	17.2	28.5	47.5



LNG Category 1: Lowest scorers – significant differences found

The comparison and program groups show significant improvement over the years (both lines have significant slope). There is also significant difference between the groups for AY0607 only ($p=.08$); but the groups are not significantly different for AY0506 or AY0708. Even though the 0708 difference is larger than 0607, there is more variation in 0708.

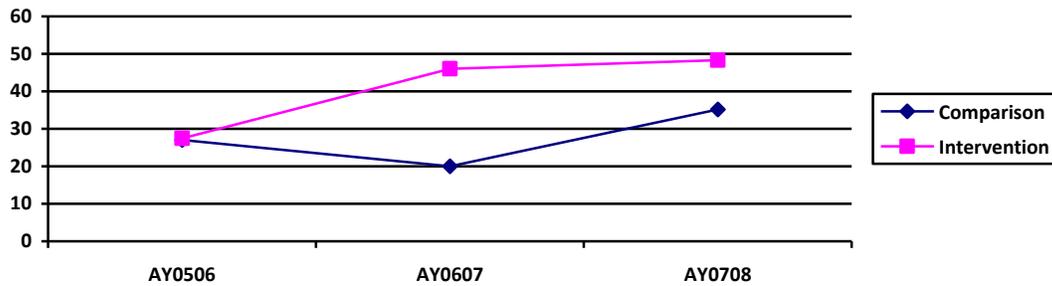
Category 1: Lowest scorers	N	AY0506	AY0607	AY0708
Comparison	5	12.6	21.8	27.0
Program	4	16.2	32.0	39.2



MTH Category 2: Below average scorers – significant differences found

There is significant upward trend for the Program participants showing significant improvement over the years (both lines have significant slope). There is a significant difference between means for year AY0607 only.

Category 2: Below average scorers	N	AY0506	AY0607	AY0708
Comparison	4	27.0	20.0	35.2
Program	6	27.5	46.0	48.3



SCI Category 1: Lowest scorers – significant differences found

There is significant upward trend for both the comparison and program showing significant improvement over the years (both lines have significant slope). And there are significant differences between means for AY 0607 and 0708.

Category 1: Lowest scorers	N	AY0506	AY0607	AY0708
Comparison	3	7.0	12.6	24.3
Program	4	13.0	37.7	48.2

