



Creativity Academy 2014-15 Evaluation

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CREATIVITY ACADEMY 2014-15 EVALUATION

Minneapolis Institute of Art
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INTRODUCTION

With the assistance of Audience Focus, Mia Learning Innovation staff conducted an evaluation of its Creativity Academy multiple visit program. Outcomes and indicators for success were revised from the 2013-14 evaluation.

The focus of the evaluation was:

To what degree did the student performance across four lessons show growth and change on the outcome measures?

Students participated in four lessons, two at their schools and two at the museum, which included writing and art making. Their work was analyzed and scored using a five-part scoring rubric that assessed accuracy and content in writing, application of formal properties, content, and synthesis in creating art, and an overall holistic score for the combined writing and art making products. See Appendix A: Scoring Rubric.

RESULTS & DISCUSSION

Description of Sample

Three schools participated in Creative Academy in school year 2014-15 and 236 students were included in the evaluation. St. Paul Music Academy represented the largest percentage of students (44%), followed by Battle Creek Elementary (35%), and Bethune Community School (21%). The table below provides the count of students for each school.

	Count
Battle Creek Elementary	82
Bethune Community School	50
St. Paul Music Academy	104
TOTAL SAMPLE	236

The following table gives the student count per teacher in the program.

	Count
Dunsmore	23
Luciano	32
Nelson	30
Cleary	27
Hennessy	20
Cain	26
Christopherson	27
Filipek-Johnson	25
Van Kampen	26
	236

Student Performance Analysis

Mean scores were calculated for each measure in each of the four lessons. T-tests for significance of difference were run on the first and last lessons as well as between schools.

The table below provides the mean scores for each measure with all three schools combined. There were significant differences between the first and last lesson on three measures, Writing Comprehension, Writing Application, and Creating Application. The difference between the first and last lesson in the two writing measures had a negative tail, as the means for the last lesson were significantly lower than in the first lesson. The difference between the first and last lessons in the creating application measure had a positive tail, meaning that the scores on the last lesson were significantly higher than on the first lesson.

Comparison of Lessons 1 to 4 for Creative Academy 2014-15

GREEN score is significantly higher than the **YELLOW** score.

	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Statistical Significance
ACCURACY: Writing Comprehension (100 pts possible)	85.3	86.6	89.7	76.8	P=<0.0001, t = 16.5259, df = 376, standard error of difference = 0.514
CONTENT: Writing-Application (3 pt scale)	1.9	1.9	1.7	0.9	P=<0.0001, t = 9.7211, df = 376, standard error of difference = 0.103
FORMAL PROPERTIES: Creating-Application (2 pt scale)	1.6	2.0	1.4	1.7	Not Significant
CONTENT: Creating-Application (2 pt scale)	1.5	2.0	1.6	1.8	P= 0.0038, t = 2.9163, df = 376, standard error of difference = 0.103
SYNTHESIS: Creating/Writing (3 pt scale)	1.8	2.0	1.5	1.8	Not Significant
HOLISTIC score (4 pt scale)	3.0	2.9	2.9	2.9	Not Significant

When we see a difference between means, such as between lesson 1 (85.3) and 4 (76.8) on the first measure, Accuracy: Writing Comprehension, a t-test tells us whether or not that difference is significant. In other words, how likely is it that the difference we see is due to chance or to the program (intervention)? In the case of this measure, the difference is highly significant, meaning that students scored significantly lower on the last lesson than they did on the first. Slight differences are not significant and are likely due to chance, such as the difference between Lesson 1 (85.3) and Lesson 3 (89.7), meaning that if we sampled a different group of students in the program the slight differences in means could as easily be reversed or the same. However, if we sampled that different group again on the first and last lesson, the t-test tells us that there is a 95% probability that the same difference between the lessons would hold.

A lack of clarity about what students were expected to write about in Lesson 4 might account, in part, for the lower Content: Writing Application scores. The instructor revised the writing prompts during earlier sessions before arriving at more explicit expectations.

Students did score significantly higher on the 4th lesson in the Content: Creating Application measure suggesting that students were better able to incorporate specified content into artwork by the last lesson than in the first lesson.

A comparison of last year's 2013-14 scores with this year's 2014-15 scores yields an interesting trend as detailed in the table below. In both years, students scored significantly higher on the Creating Application – Content for the 4th lesson as compared to the first lesson.

Comparison of 2013-14 and 2014-15 Creative Academy scores

GREEN score is significantly higher than the **YELLOW** score.

		Lesson 1	Lesson 2	Lesson 3	Lesson 4	
Writing Comprehension ¹	(2014)	93	65	88	86	2014: Not significant
	(2015)	85	87	90	77	2015: Lesson 4 statistically lower than lesson 1
Writing Application – CONTENT ² <i>(based on 3-point scale)</i>	(2014)	1.8	1.8	1.5	1.3	2014: Not significant
	(2015)	1.9	1.9	1.7	0.9	2015: Lesson 4 statistically lower than lesson 1
Creating Application - FORMAL PROPERTIES <i>(based on 2-point scale)</i>	(2014)	1.5	n/a	1.3	1.6	2014: Not significant
	(2015)	1.6	2.0	1.4	1.7	2015: Not significant
Creating Application – CONTENT <i>(based on 2-point scale)</i>	(2014)	0.8	n/a	1.3	1.7	2014: 4 th lesson is significantly higher than lesson 1.
	(2015)	1.5	2.0	1.6	1.8	2015: 4 th lesson is significantly higher than lesson 1
Creating/Writing - SYNTHESIS <i>(based on 3- point scale)</i>	(2014)	1.2	1.8	1.5	1.6	2014: The increase from 1 st to 2 nd is significant. Increase on 4 th compared to 1 st is significant.
	(2015)	1.8	2.0	1.5	1.8	2015: Exactly the same 1 st to 4 th

The table below breaks out the mean scores for each measure on each lesson by school. Here we see that there is a “school factor,” meaning that one school, Bethune, is performing significantly lower on several measures in lessons 1, 3, and 4. Bethune scored essentially the same as the other two schools on lesson 2, with the exception of Accuracy: Writing Comprehension, where their mean was significantly higher than the other two schools. However, even when the Bethune scores are removed, the 4th lesson scores are still significantly lower than the 1st lesson scores on the two writing measures, accuracy and content, and the same on the other measures.

Comparison of scores across the three participating schools 2014-15

Creative Academy

GREEN score is significantly higher than the **YELLOW** score.

(Note: School names have been removed to protect score anonymity)

Sample size	85	39	62	189	
	School 1	School 2	School 3	TOTAL	Statistical significance
Lesson 1 - ACCURACY: Writing Comprehension	91.0	60.8	92.9	85.3	P=<0.0001, t = 139.3034, df = 226, standard error of difference = 0.176
Lesson 1 - CONTENT: Writing- Application	2.0	1.5	2.1	1.9	P=0.0239, t = 2.2743, df = 226, standard error of difference = 0.176
Lesson 1 - FORMAL PROPERTIES: Creating- Application	1.7	1.3	1.7	1.6	
Lesson 1 - CONTENT: Creating-Application	1.5	0.9	1.7	1.5	P=0.0008, t = 8.9171, df = 226, standard error of difference = 0.176
Lesson 1 - SYNTHESIS: Creating/Writing-	1.9	1.2	2.1	1.8	P=0.0008, t = 3.4115, df = 226, standard error of difference = 0.176
Lesson 1 - Holistic	3.0	2.9	3.1	3.0	
Lesson 2 - ACCURACY: Writing Comprehension	81.3	93.8	90.4	86.6	P=<0.0001, t = 40.9382, df = 226, standard error of difference = 0.176
Lesson 2 - CONTENT: Writing- Application	1.7	2.1	2.0	1.9	
Lesson 2 - FORMAL PROPERTIES: Creating- Application	2.0	2.0	2.0	2.0	
Lesson 2 - CONTENT: Creating-Application	2.0	1.9	2.0	2.0	
Lesson 2 - SYNTHESIS: Creating/Writing-	1.9	2.0	2.1	2.0	
Lesson 2 - Holistic	2.8	3.0	2.9	2.9	
Lesson 3 - ACCURACY: Writing Comprehension	90.7	82.0	92.2	89.7	P=<0.0001, t = 43.7811, df = 226, standard error of difference = 0.176
Lesson 3 - CONTENT: Writing- Application	2.0	1.3	1.5	1.7	P = 0.0239, t = 2.2743, df = 226, standard error of difference = 0.176
Lesson 3 - FORMAL PROPERTIES: Creating- Application	1.4	1.3	1.5	1.4	
Lesson 3 - CONTENT: Creating-Application	1.7	1.4	1.6	1.6	
Lesson 3 - SYNTHESIS: Creating/Writing-	1.7	1.2	1.5	1.5	
Lesson 3 - Holistic	3.0	2.7	2.9	2.9	

Lesson 4 - ACCURACY: Writing Comprehension	81.4	64.4	76.4	76.8	P=<0.0001, t = 25.9907, df = 237, standard error of difference = 0.477
Lesson 4 - CONTENT: Writing- Application	1.4	0.3	0.5	0.9	
Lesson 4 - FORMAL PROPERTIES: Creating- Application	1.7	1.5	1.8	1.7	P=0.0008, t = 3.4115, df = 226, standard error of difference = 0.176
Lesson 4 - CONTENT: Creating-Application	1.8	1.7	1.9	1.8	
Lesson 4 - SYNTHESIS: Creating/Writing-	1.9	1.1	2.0	1.8	P=<0.0001, t = 3.9801, df = 226, standard error of difference = 0.176
Lesson 4 - Holistic	2.9	2.6	2.9	2.9	

CONCLUSION

As was the case last year, the writing portion of the 4th lesson was likely more challenging for students, in general. This assessment is not intended to be a “grade” for the program. Rather it serves as a diagnostic to inform educators how students understand the experiences, enabling them to base their decisions to adjust and revise the curriculum based on evidence. Pedagogically, it is a good strategy to start students with an easier learning experience. The scores for the first lesson were most probably higher than the last lesson because Mia educators conducted the lesson at school. Consequently, the novelty factor was very low for students and they could focus. Providing a bit more challenge to students on the last lesson in the writing task is also pedagogically sound. As this was the students’ second visit to the museum, they were able to enjoy more challenging work. That there were so few differences between first and last lessons, suggests that the lessons were well paced across the program.

It is also not unusual to have a “school factor” where one school out-performs or under-performs in relation to the other participating schools. This is often the case when a school is new to the program. The novelty effect is increased because not only are students adjusting to a new environment (the museum), but teachers are also acclimating to a new environment and schedule.

APPENDIX A: SCORING RUBRIC

Creativity Academy 2014

	Lesson 1	Lesson 2	Lesson 3	Lesson 4
Writing-Comprehension (ACCURACY)	Diamante poem is completed correctly (1-16 points)	Cinquain poem is completed correctly (1-11 points)	Diamante poem is completed correctly (1-14 points)	Correct number of syllables in each line (1-3 points)
Writing-Application (CONTENT)	Writing describes a family member 0= No 1 = Yes, minimal, predictable, generic 2 = Personal, fairly predictable, generic 3= Clear and Unique	Writing includes words that describe sound, appearance and feelings toward student's soundsuit 0= No 1 = Yes, minimal, predictable, generic 2 = Personal, fairly predictable, generic 3= Clear and Unique	Poem is about a storm student experienced 0= No 1 = Yes, minimal, predictable, generic 2 = Personal, fairly predictable, generic 3= Clear and Unique	Haiku includes reference to animal's habitat 0 = No 1 = Yes, minimal, predictable, generic 2 = Personal, fairly predictable, generic 3= Clear and Unique
Creating-Application (FORMAL PROPERTIES)	Drawing of family member(s) fills the whole space 0=Definitely Not 1 = Partially 2 = YES Definitely	Noisemaker makes noise 0= No 1 = Yes	Drawing includes layers of pastels to create texture and/or blend colors together 0=Definitely Not 1 = Somewhat 2 = YES Definitely	Ceramic artwork is a vessel 0=Definitely Not 1 = Partially 2 = YES Definitely
Creating-Application (CONTENT)	Drawing includes a background that tells something about the family member 0= No 1 = Partially/not sure 2 = Yes	Noisemaker can be attached to a body 0=No 1 = Yes	Pastel drawing tells a story about a storm you experienced 0= No 1 = Partially/not sure 2 = Yes	Ceramic artwork depicts an animal 0= No 1 = Partially/not sure 2 = Yes
Creating/ Writing- SYNTHESIS	Artwork includes details from poem 0= No 1 = Yes, minimal, predictable, generic 2 = Personal, fairly predictable, generic 3= Clear and Unique details	Cinquain poem refers to the Noisemaker student made 0= No 1 = Yes, minimal, predictable, generic 2 = Personal, fairly predictable, generic 3= Clear and Unique details	Artwork includes details from diamante poem 0= No 1 = Yes, minimal, predictable, generic 2 = Personal, fairly predictable, generic 3= Clear and Unique details	Haiku poem refers to the animal vessel student made 0= No 1 = Yes, minimal, predictable, generic 2 = Personal, fairly predictable, generic 3= Clear and Unique details
Holistic	1 = Attempted one or the other, but below average, or completed both, but with no real effort. Not even close. 2 = Both are average to good. Student really made an effort. Or, only one is done, but it's really good. They tried to do a good job. 3 = One is outstanding/special, the other is average. 4 = Writing and art work "hum." Both are outstanding /special examples.	1 = Attempted one or the other, but below average, or completed both, but with no real effort. Not even close. 2 = Both are average to good. Student really made an effort. Or, only one is done, but it's really good. They tried to do a good job. 3 = One is outstanding/special, the other is average. 4 = Writing and art work "hum." Both are outstanding /special examples.	1 = Attempted one or the other, but below average, or completed both, but with no real effort. Not even close. 2 = Both are average to good. Student really made an effort. Or, only one is done, but it's really good. They tried to do a good job. 3 = One is outstanding/special, the other is average. 4 = Writing and art work "hum." Both are outstanding /special examples.	1 = Attempted one or the other, but below average, or completed both, but with no real effort. Not even close. 2 = Both are average to good. Student really made an effort. Or, only one is done, but it's really good. They tried to do a good job. 3 = One is outstanding/special, the other is average. 4 = Writing and art work "hum." Both are outstanding /special examples.