Abstract

Across the United States, educators are seeing a rise in the mental health crisis and need for more Social and Emotional Learning being implemented into the curriculum. The need for SEL implementation in schools and students needing help regulating and working through their emotions has been heightened by the COVID 19 pandemic and the virtual schooling over the last two years. Students are having trouble managing, expressing, and regulating their emotions because students are more stressed than ever before. Studies have shown that including SEL into the curriculum has benefited students and evidence that supports SEL practices being implemented in the art education classroom. There are still gaps in research with much of the research following SEL in the fine arts classroom focusing on music, dance and theater, and little written about the implementation in the art classroom. While there are some SEL art curriculums written, like *Art with Heart*, there is a gap in research backing up SEL-centered art curriculums. This mixed methods study promotes the implementation of SEL art curriculum and how it can help reduce stress in students. This research centers around four case studies focusing on SEL completed in first, fourth and sixth grade art classrooms. Finally, this research examines the benefits to implementing an art curriculum focusing on SEL to promote stress reduction in students and help students to begin to regulate and manage their emotions in the school setting.

Research

My research was conducted in Barrackville, WV (at Barrackville Elementary and Middle School) where I collected both qualitative and quantitative data. 76 students across the three grades were able to participate in this study; First grade had a total of 33 students participating in the study, while fourth grade had a total of 29 students and sixth grade had a total of 15 students.

I analyzed student's stress levels through four different case studies: DrawTogether Inside Weather activity, Art with Heart curriculum (Feeling Grumpy, Salt, Paint & Music, and Positive Prints projects), Neurographic Art and Mandalas. These activities were chosen because they fit the SEL Castel standards of self-management and self-awareness.

Stress levels were collected for the quantitative data with an 'Emotional Thermometer', an initial stress level was conducted during the inside weather lesson after introducing the project and discussing stress and different emotions and how artwork can be used to symbolize emotions. During the three other case studies the students marked their stress level after creating art.

Qualitative data was collected through informal discussions and notes from those discussions with students during the four case studies and their artwork.

Analysis

Qualitative Data

Inside Weather

Students were able to make connections with their emotions to symbolize them. Students were able to symbolize different emotions using imagery and experiment with color.

Art with Heart

Feeling Grumpy (1st graders), *Salt, Paint, & Music* (4th grade), and *Positive Prints* (6th grade)

All fit into the SEL competencies/ standards of self-management and/or self-awareness. These lessons allowed students to express their emotions, let go of the expectations of how their work should look like or create a 'perfect' image (1st and 6th graders). Students also got to experience experimenting with their work and responding to music (4th graders). Students also learned to work through the process and learn how artwork does not always turn out how you expect the first time (6th graders).

Neurographic Art

1st graders were able to work through the process and not stress about the steps like 4th and 6th graders to get their work to look 'perfect' or turn out exactly like the example or the description of the process. Most students embraced the abstract style while some 1st graders (Student 71) were able to see a puppy in their work. Students had the option to pick their materials, most used drawing materials (colored pencils, crayons or markers) while the older students (4th and 6th graders) had the option of using watercolors and more 4th graders chose to use watercolors than 6th graders.

Mandala

Students learned about mandalas and their history before creating their own. Students had the choice to create either a traditional mandala showing radial symmetry and using geometric shapes to create patterns or to create an abstract design in their mandala. Students had the choice to pick their medium and most chose a drawing material (markers, colored pencils, etc.) while a few chose to use watercolors.

Through informal discussions throughout the classes during the four case studies, students said they felt stress from tests and school projects (i-ready diagnostic tests and final projects), sports they were playing, responsibilities at home like helping parents with chores to taking care of siblings, and some stress from frustration when making art (when they were not able to create or produce the image they were expecting or trying to create) either from the process or the art medium they were using. Overall students expressed through the informal discussions that the artmaking allowed them to relax and feel less stress compared to before they started creating art during the case studies.

<u>Quantitative Data</u>

To analyze the quantitative data I ran ANOVA two-way without replication test for each grade to compare the stress levels for all four case studies and also to compare the stress levels of the pre-test (inside weather) with each of the three post-test activities.

- After running the ANOVA two-way factor without replication, the graph indicates that there was a significant decrease in the overall stress levels in first, fourth, and sixth grade students who participated in this study (Appendix F). Over the course of the case studies, there is a drop in stress level overall from the initial case study, (inside weather) that was used to create baseline data. As seen in the graph, there is then an overall steady decrease in stress levels of the students resulting in the average, indicating less than a two for their level of stress indicated by the emotional stress thermometer. When analyzing the p

Value, the ANOVA two-way factor without replication resulted in 2.473E-12 which is less than the **specified significance level of 0.05**, which was used in this test, when analyzing the data between case studies. The test resulted in p Value of 1.478E-6, which is also less than the specified significance level of 0.05 when analyzing the overall stress levels by student. These results, which are mirrored in the graph found in Appendix F, prove that the null hypothesis can be rejected, and the **hypothesis that the SEL curriculum-based case studies show an overall decrease in stress levels of the participating students.**

- Like with the overall results for each ANOVA two-way factor with replication we can see that the **p Values are less than the specified significance level of 0.05** that was used when running the tests. The ANOVA test resulted in first grade with a pValue .027562359, fourth grade p Value of 6.87331E-7, and sixth grade rounded to p Value of 0.003625. This is reflected in the decline seen in the line graphs in Appendixes G-I. When analyzing the graphs put together, (Appendix J) shows that in **both fourth and sixth graders there is a more significant drop of stress seen in students overall, while first grade shows a steady decline in stress**. In both **fourth and sixth grade** we see after the **Neurographic case study an average of the lowest stress levels and a spike after the Mandala case study**. **Overall, fourth grade students on average** showed the **most significant drop in stress levels during the study** with a **significant drop** from t**he initial case study between the second and third case studies.**
- For each of the grade levels (1, 4, 6), there is a significant decrease from pre (Inside Weather) ArtHearth measure (1) to post ArtHeart measure (2). P (significant levels) is smaller than 0.05 for each case!
- **Neuro** (Significant interaction between Grade and Neuro exists…. This means the changes between pre and post measures varied differently based on grade levels!) This was the only case study showing a variation by grade
    - For each of the grade levels (1, 4, 6), there is a significant decrease from pre (Inside Weather) Neuro measure (1) to post Neuro measure (2). P (significant levels) is smaller than 0.05 for each case!No significant difference exists among the grade levels in **pre** Neuro measure, there IS a significant difference among the
    - However, there a IS significant difference between grade level 1 and grade level 4 on **post Neuro** measure. P is considered equal to 0.05. By looking at the graph, this means, compared to 1st graders, 4th grader's had significantly lower Neuro measure in post test.
- For each of the grade levels (1, 4, 6), there is a significant decrease from pre (Inside Weather) Mandala measure (1) to post Mandala measure (2). P (significant levels) is smaller than 0.05 for each case!

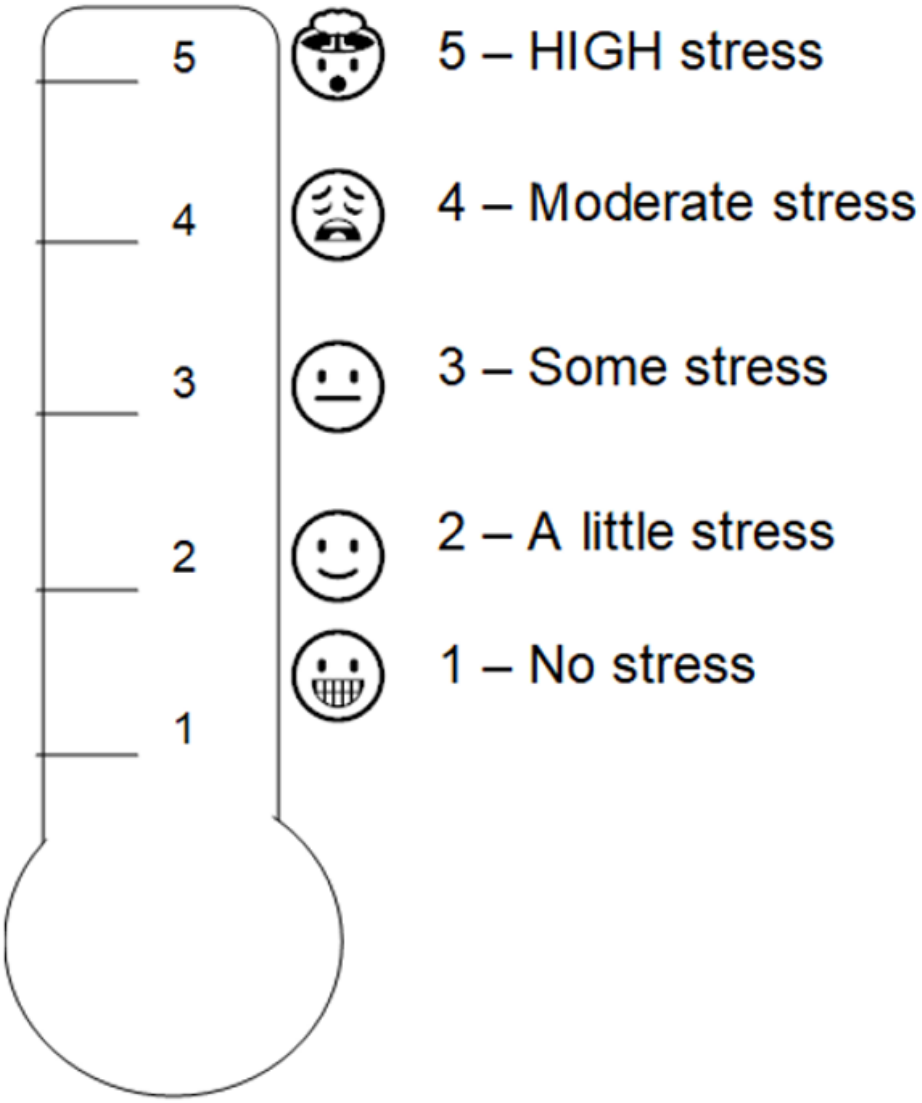
Findings:

Student's stress from

- Outside stressors (sports, family responsibilities)
- Stressors from school (tests (i-ready diagnostic) or school projects)
- End results of artwork- perfectionism
- Results of emotional thermometer

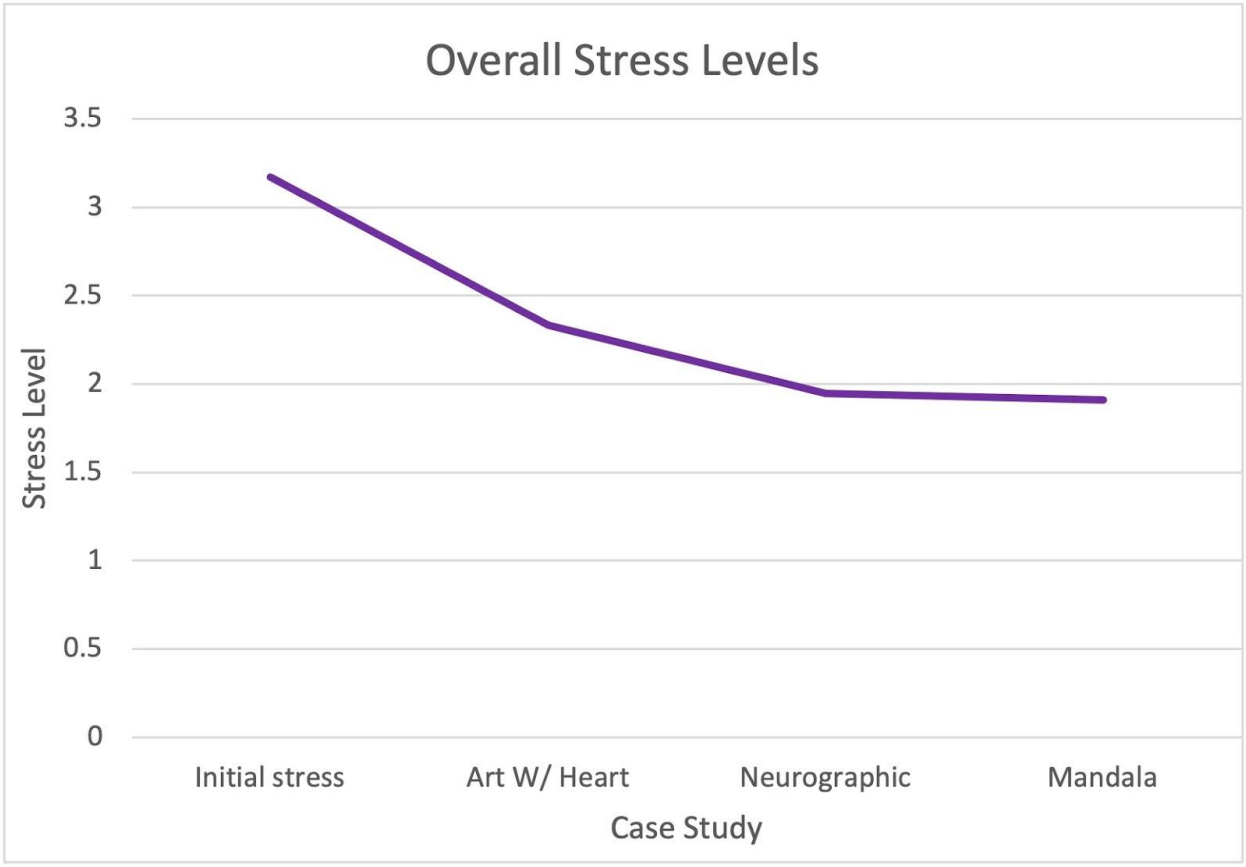
All of this proves that there is a need for an SEL art curriculum. As this research shows, having SEL centered art curriculum where students are able to express and explore their emotions to become more self-aware and help manage their emotions and will help student across all aspects of their lives. Through artmaking students overall showed a decrease in stress, with all case studies showing a decrease in stress compared to the initial activity. Artmaking allows for a decrease in stress and a healthy outlet for students and release any stress they are feeling.

Emotional Thermometer

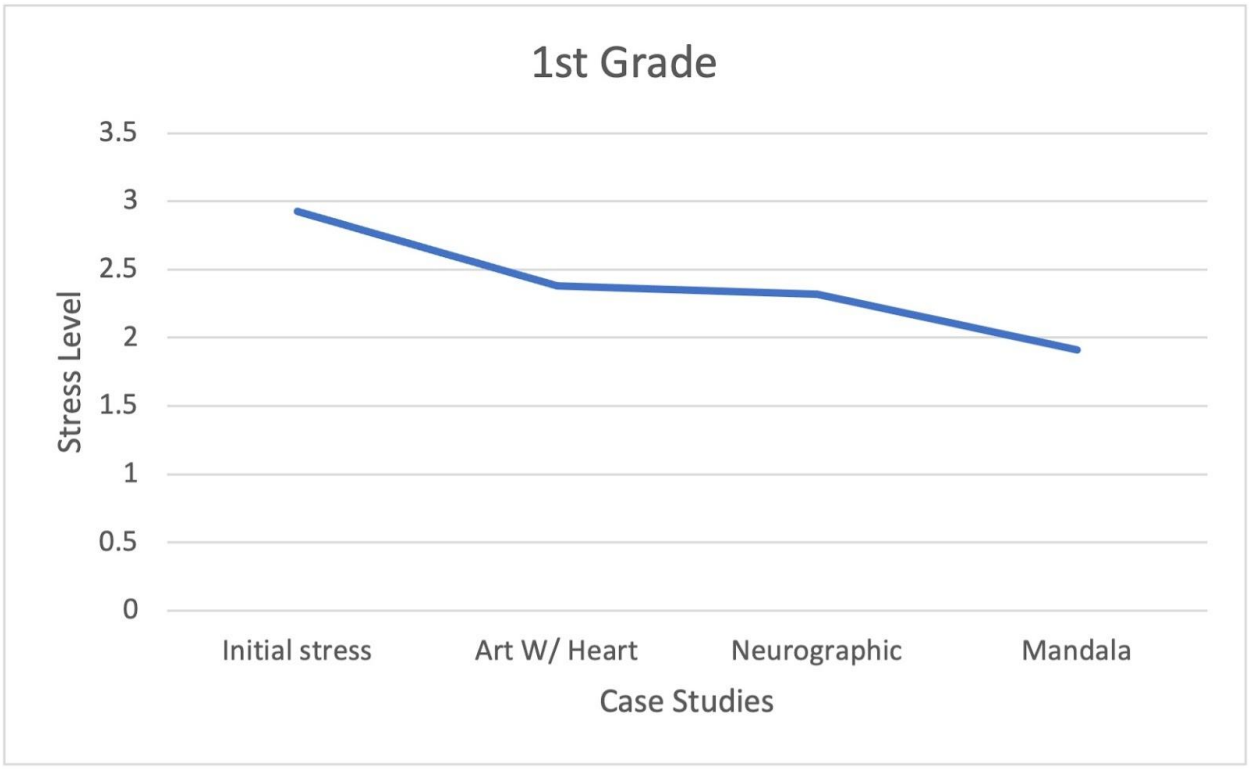


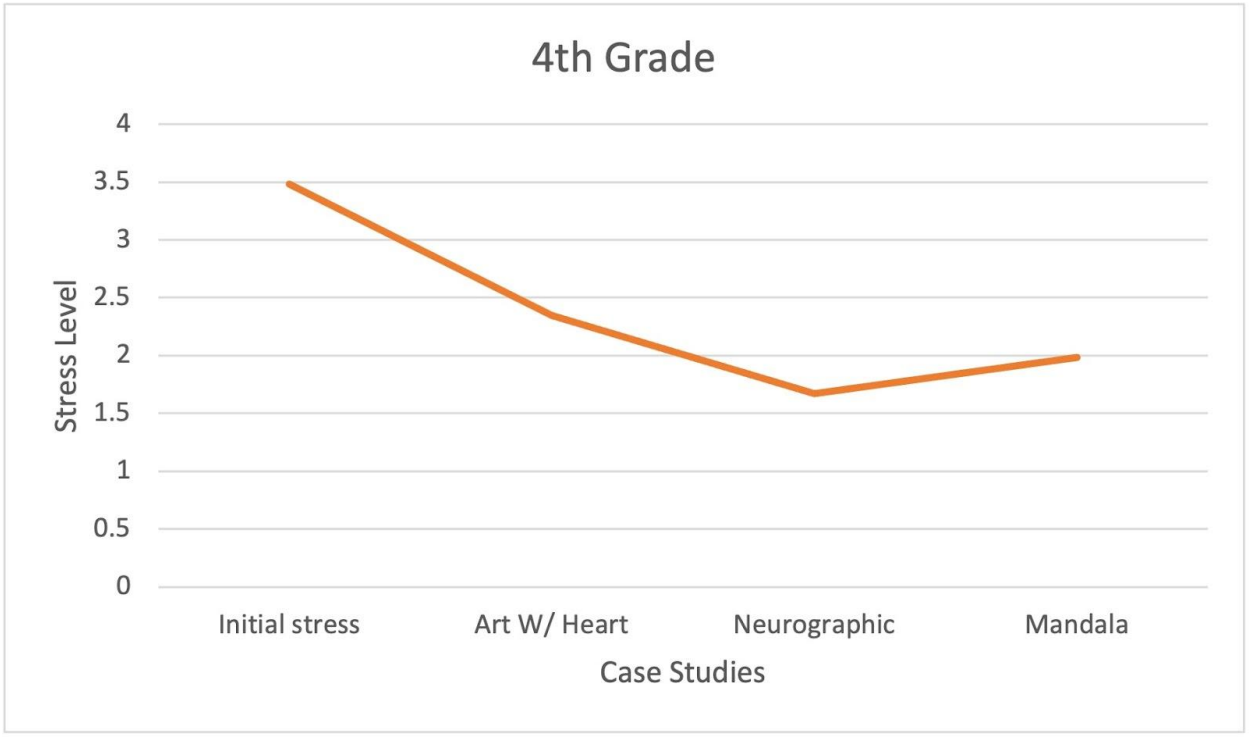
Quantitative Results

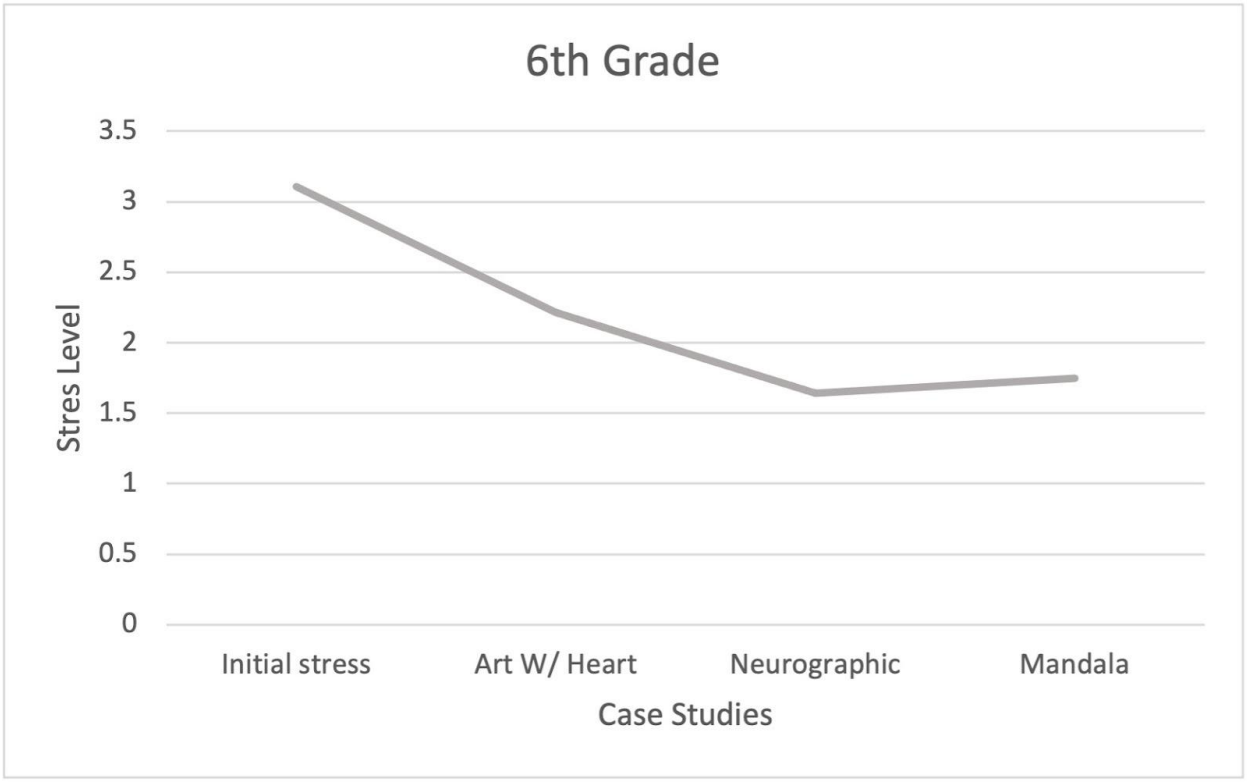
ANOVA Two-way factor without replication

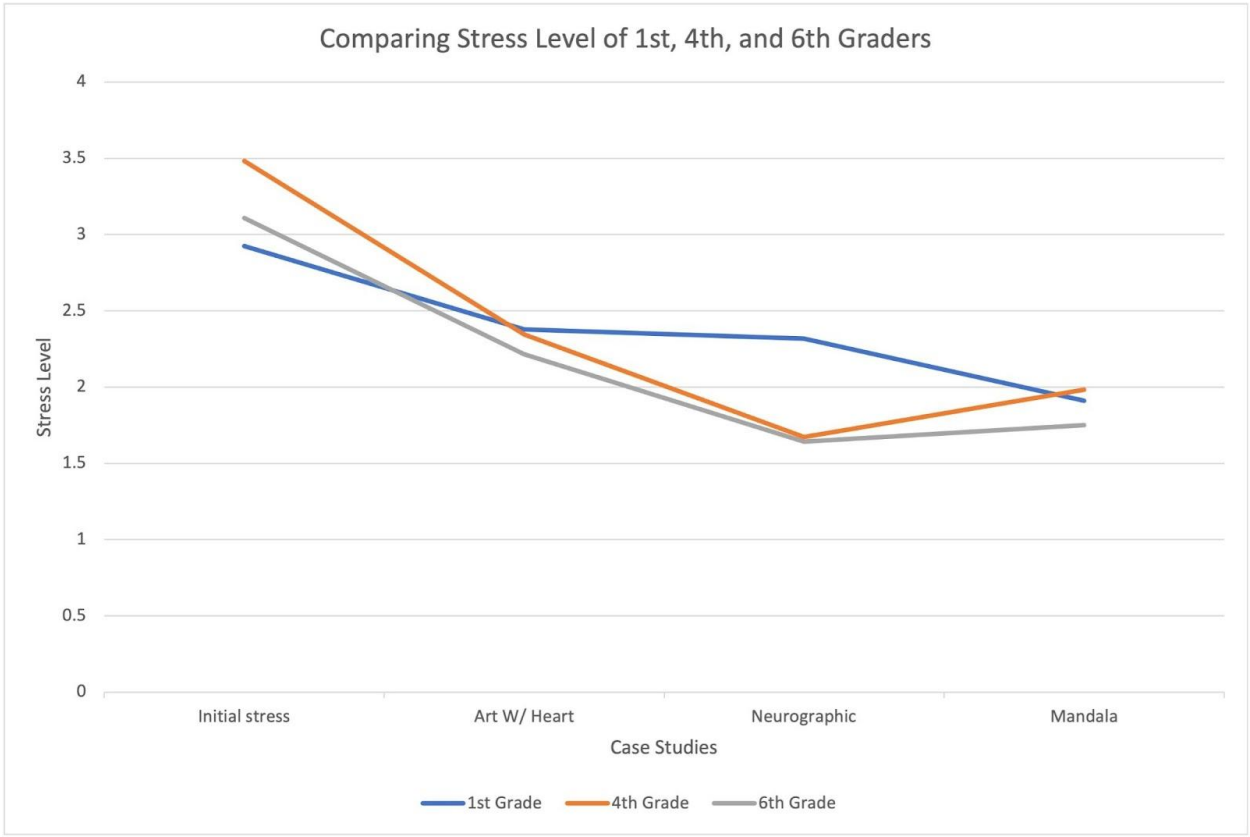


ANOVA Two-way factor with replication by grade



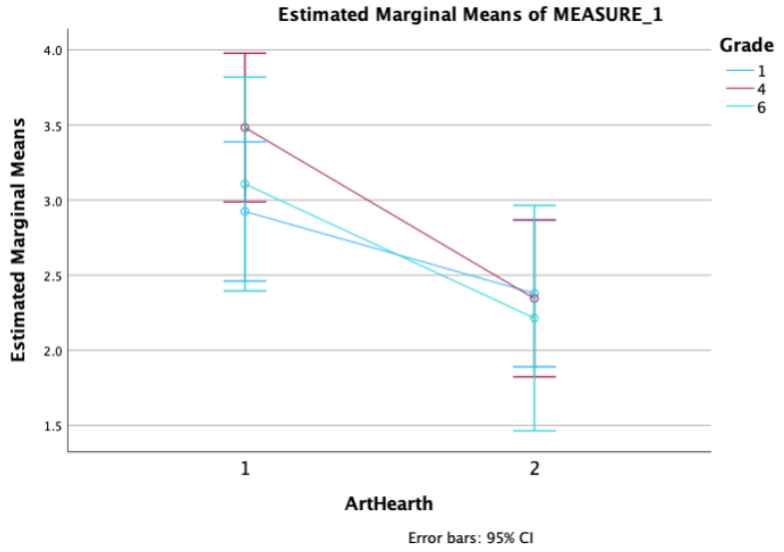



6th Grade
3.5
3
2.5
2
1.5
1
0.5
0
Stres Level
Initial stress
Art W/ Heart
Neurographic
Mandala
Case Studies


Comparing Stress Level of 1st, 4th, and 6th Graders
4
3.5
3
2.5
2
1.5
1
0.5
0
Stress Level
Initial stress
Art W/ Heart
Neurographic
Mandala
Case Studies
1st Grade
4th Grade
6th Grade

ANOVA Two-way with replication by case study

Comparison of Art with Heart (post) case study to Inside Weather (pre)



Estimates

Measure: MEASURE_1

Grade	ArtHearth	Mean	Std. Error	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
1	1	2.924	.233	2.461	3.388
	2	2.379	.245	1.890	2.868
4	1	3.483	.248	2.988	3.977
	2	2.345	.262	1.823	2.866
6	1	3.107	.357	2.395	3.819
	2	2.214	.377	1.464	2.965

Pairwise Comparisons

Measure: MEASURE_1

Grade	(I) ArtHearth	(J) ArtHearth	Mean Difference (I–J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	95% Confidence Interval for Difference[b] Upper Bound
1	1	2	.545*	.269	.046	.009	1.082
	2	1	-.545*	.269	.046	-1.082	-.009
4	1	2	1.138*	.287	<.001	.565	1.710
	2	1	-1.138*	.287	<.001	-1.710	-.565
6	1	2	.893*	.413	.034	.069	1.717
	2	1	-.893*	.413	.034	-1.717	-.069

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Multivariate Tests

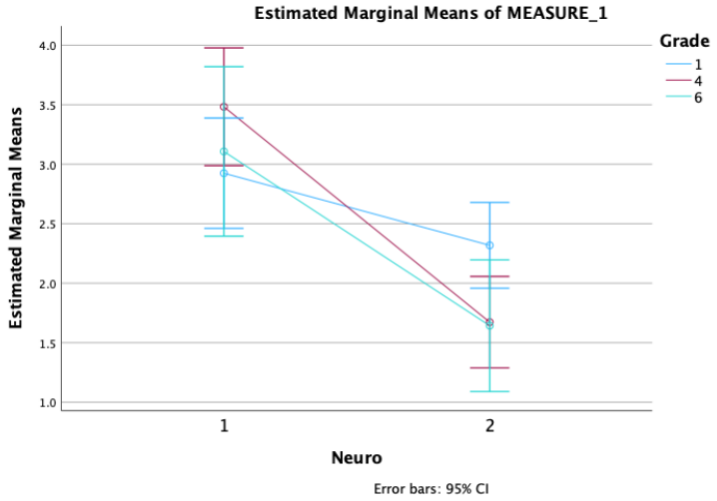
Grade		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
1	Pillai's trace	.053	4.102[a]	1.000	73.000	.046	.053	4.102	.515
	Wilks' lambda	.947	4.102[a]	1.000	73.000	.046	.053	4.102	.515
	Hotelling's trace	.056	4.102[a]	1.000	73.000	.046	.053	4.102	.515
	Roy's largest root	.056	4.102[a]	1.000	73.000	.046	.053	4.102	.515
4	Pillai's trace	.177	15.690[a]	1.000	73.000	<.001	.177	15.690	.974
	Wilks' lambda	.823	15.690[a]	1.000	73.000	<.001	.177	15.690	.974
	Hotelling's trace	.215	15.690[a]	1.000	73.000	<.001	.177	15.690	.974
	Roy's largest root	.215	15.690[a]	1.000	73.000	<.001	.177	15.690	.974
6	Pillai's trace	.060	4.663[a]	1.000	73.000	.034	.060	4.663	.568
	Wilks' lambda	.940	4.663[a]	1.000	73.000	.034	.060	4.663	.568
	Hotelling's trace	.064	4.663[a]	1.000	73.000	.034	.060	4.663	.568
	Roy's largest root	.064	4.663[a]	1.000	73.000	.034	.060	4.663	.568

Each F tests the multivariate simple effects of ArtHearth within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Exact statistic

b. Computed using alpha = .05

Comparison of Neurographic Art (post) case study to Inside Weather (pre)



Estimates

Measure: MEASURE_1

Grade	Neuro	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
1	1	2.924	.233	2.461	3.388
	2	2.318	.181	1.958	2.679
4	1	3.483	.248	2.988	3.977
	2	1.672	.193	1.288	2.057
6	1	3.107	.357	2.395	3.819
	2	1.643	.278	1.090	2.196

Pairwise Comparisons

Measure: MEASURE_1

Grade	(I) Neuro	(J) Neuro	Mean Difference (I–J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
						Lower Bound	Upper Bound
1	1	2	.606*	.267	.026	.074	1.138
	2	1	-.606*	.267	.026	-1.138	-.074
4	1	2	1.810*	.285	<.001	1.243	2.378
	2	1	-1.810*	.285	<.001	-2.378	-1.243
6	1	2	1.464*	.410	<.001	.647	2.281
	2	1	-1.464*	.410	<.001	-2.281	-.647

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

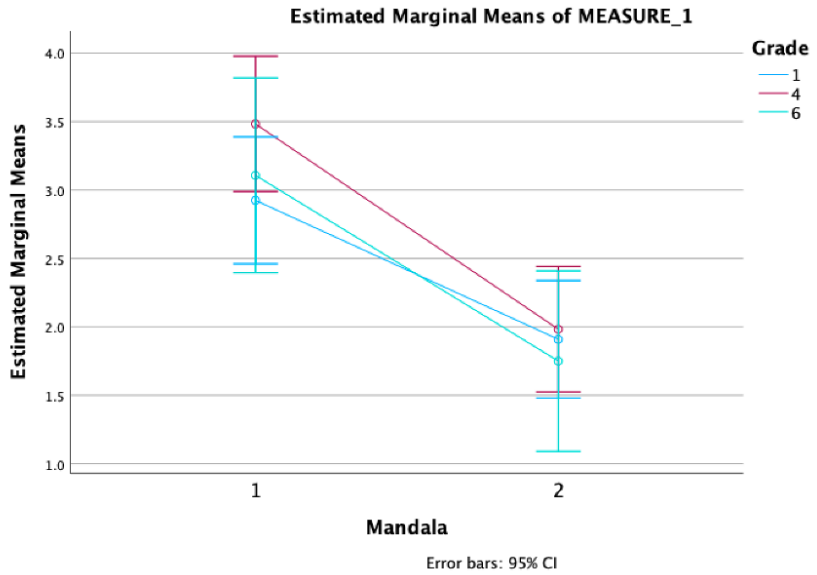
Multivariate Tests

Grade		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
1	Pillai's trace	.066	5.150[a]	1.000	73.000	.026	.066	5.150	.610
	Wilks' lambda	.934	5.150[a]	1.000	73.000	.026	.066	5.150	.610
	Hotelling's trace	.071	5.150[a]	1.000	73.000	.026	.066	5.150	.610
	Roy's largest root	.071	5.150[a]	1.000	73.000	.026	.066	5.150	.610
4	Pillai's trace	.356	40.381[a]	1.000	73.000	<.001	.356	40.381	1.000
	Wilks' lambda	.644	40.381[a]	1.000	73.000	<.001	.356	40.381	1.000
	Hotelling's trace	.553	40.381[a]	1.000	73.000	<.001	.356	40.381	1.000
	Roy's largest root	.553	40.381[a]	1.000	73.000	<.001	.356	40.381	1.000
6	Pillai's trace	.149	12.754[a]	1.000	73.000	<.001	.149	12.754	.941
	Wilks' lambda	.851	12.754[a]	1.000	73.000	<.001	.149	12.754	.941
	Hotelling's trace	.175	12.754[a]	1.000	73.000	<.001	.149	12.754	.941
	Roy's largest root	.175	12.754[a]	1.000	73.000	<.001	.149	12.754	.941

Each F tests the multivariate simple effects of Neuro within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Exact statistic

Comparison of Mandala Art (post) case study to Inside Weather (pre)



Estimates

Measure: MEASURE_1

Grade	Mandala	Mean	Std. Error	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
1	1	2.924	.233	2.461	3.388
	2	1.909	.215	1.480	2.339
4	1	3.483	.248	2.988	3.977
	2	1.983	.230	1.525	2.441
6	1	3.107	.357	2.395	3.819
	2	1.750	.331	1.091	2.409

Pairwise Comparisons

Measure: MEASURE_1

Grade	(I) Mandala	(J) Mandala	Mean Difference (I–J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	95% Confidence Interval for Difference[b] Upper Bound
1	1	2	1.015*	.246	<.001	.525	1.505
	2	1	-1.015*	.246	<.001	-1.505	-.525
4	1	2	1.500*	.262	<.001	.978	2.022
	2	1	-1.500*	.262	<.001	-2.022	-.978
6	1	2	1.357*	.377	<.001	.605	2.109
	2	1	-1.357*	.377	<.001	-2.109	-.605

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Multivariate Tests

Grade		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
1	Pillai's trace	.189	17.067[a]	1.000	73.000	<.001	.189	17.067	.983
	Wilks' lambda	.811	17.067[a]	1.000	73.000	<.001	.189	17.067	.983
	Hotelling's trace	.234	17.067[a]	1.000	73.000	<.001	.189	17.067	.983
	Roy's largest root	.234	17.067[a]	1.000	73.000	<.001	.189	17.067	.983
4	Pillai's trace	.310	32.747[a]	1.000	73.000	<.001	.310	32.747	1.000
	Wilks' lambda	.690	32.747[a]	1.000	73.000	<.001	.310	32.747	1.000
	Hotelling's trace	.449	32.747[a]	1.000	73.000	<.001	.310	32.747	1.000
	Roy's largest root	.449	32.747[a]	1.000	73.000	<.001	.310	32.747	1.000
6	Pillai's trace	.151	12.941[a]	1.000	73.000	<.001	.151	12.941	.944
	Wilks' lambda	.849	12.941[a]	1.000	73.000	<.001	.151	12.941	.944
	Hotelling's trace	.177	12.941[a]	1.000	73.000	<.001	.151	12.941	.944
	Roy's largest root	.177	12.941[a]	1.000	73.000	<.001	.151	12.941	.944

Each F tests the multivariate simple effects of Mandala within each level combination of the other effects shown. These tests are based on