5-2024

Implementing Instructional and Assessment Strategies to Improve Student Success in Art

Hayden Thomaier
hthomaier@unomaha.edu

Recommended Citation

Implementing Instructional and Assessment Strategies to Improve Student Success in Art

Hayden A. Thomaier

University Honors Capstone

College of Education, Health, and Human Sciences

University of Nebraska at Omaha

Advisors: Justin Andersson, PhD and Lucy Morrison, PhD

April 5, 2024

Table of Contents

Abstract

For my honors capstone project, I taught a 3-week unit to my Art III class at a suburban high school in Nebraska. This unit covered concepts such as color theory, composition, and how to create the illusion of depth within a piece of art. This unit ended with the students creating a 24x30 in. painting of a space that was personal to them. The instructional strategies that I used throughout the unit included learning objectives, providing feedback, and nonlinguistic forms of representation. The assessment strategies I used included a pre- and post-assessment at the beginning and end of the unit, full class critique, and the use of a rubric for grading. I found that these strategies of instruction and assessment proved to be effective because my students grew from an average score of 50% on their pre-assessment at the beginning of the unit to an average score of 85% on their post-assessment that was taken at the end of the unit.

Introduction

Throughout this lesson, I utilized a plethora of instructional and assessment strategies to aid me and my students during the unit. Because this is a multi-week unit, I decided to utilize daily learning objectives to help my students organize their time and stay on pace. I also used nonlinguistic representations so that my students could organize their notes. I wanted my students to be able to talk about art and share their opinions as well as be able to accept and apply constructive criticism to their work, so I decided to use the strategy peer feedback. Lastly, the assessment strategies I utilized included rubrics and pre- and post-assessments. These helped me measure my student's growth throughout the unit.

Learning Objectives

The project I did with my students was a personal space painting where my students were asked to choose a space that had some meaning to them and consisted of a foreground, middle ground, and a background. They then had to complete a 24x30 in. acrylic painting using the techniques they had

learned in class such as dry brushing, glazing, and masking. The students also had to show an understanding of color theory, specifically, they had to demonstrate their knowledge of tones, tints, and shades, as well as color families such as complimentary, split-complimentary, and analogous. Finally, the painting had to contain foreground, middle ground, and background, which was another concept that was covered throughout the unit.

The goals of the unit were to develop a painting that used color theory and composition to create the illusion of depth and to have the students develop their own painterly style to create a work that represented themselves as individual artists. I also wanted my students to be able to critique and defend the personal artistic choices that they used to convey the desired message of their artwork.

Goals of the Intervention

The goals of my capstone project included using learning objectives each day to help my students understand what the goal of the day was, providing daily feedback to my students and encouraging them to offer up their own opinions, and using post and pre-assessments in the form of online quizzes to gauge what my students learned throughout the unit.

Background

My student teaching placement was at a suburban high school in Nebraska. The unit I taught was a Personal Spaces unit in an Art III class that consisted of one tenth grader, one eleventh grader, and two twelfth graders. My cooperating teacher and I began discussing this project and the unit I would teach before the semester even began. My cooperating teacher and I discussed the requirements of the project and we decided that I would teach a painting lesson because the lesson could take place during an opportune time in the semester. We originally planned on me teaching an Art II class but due to the amount of snow days we had at the beginning of the semester, we decided to pivot and have me teach his Art III class because they were not as behind in the content as was his Art II class. This lesson was one

that he had done with his students in the past and so I utilized some of the materials he had already developed as well as created some of my own to implement within the lesson.

Setting Learning Objectives and Providing Feedback

Learning objectives are statements that are used to communicate the purpose of the lesson/activities to the students. Learning objectives are a great way to guide students focus throughout the lesson and prepare them to reach the desired outcome of the lesson. The first article I read titled *Clearly Communicating the Learning Objective Matters!* (Reed, 2012) talks about the importance of developing, communicating, and consistently referencing back to learning objectives throughout the lesson. The article explores a case study where a second-year 7th grade geography teacher was struggling to keep his students focused and well-behaved throughout the lesson. The teacher asked for a professional coach to aid him and in the process of doing so learned about the importance of learning goals. The teacher found that with the use of learning goals his students were more focused on the content of the lesson and provided more relevant and well-articulated responses to his questions. He also found that with his students now more focused and engaged on the lesson, he was having to deal with behavioral issues less frequent than before his adoption of learning goals.

The second article I read titled *Writing and Using Learning Objectives* (Orr, Csikari, Freeman, and Rodriguiez, 2022) talks about the most effective ways to write learning objectives and the benefits of using them. The article stated that the use of learning objectives helps students to focus in on the lesson being presented, regulate themselves, and organize their time. The article also mentions that learning objectives are more effective when they are reinforced through instruction.

Learning objectives can prove to be especially useful with a unit like the one I taught because it is a multi-week-long project where the students are being asked to work independently for a substantial amount of time. Learning objectives can help my students focus on the objective of the day and organize their time.

Nonlinguistic Representations

Nonlinguistic representations are a way to present information focusing primarily on the use of images and graphics. Nonlinguistic representations can help students recall information quicker and with more accuracy, recognize patterns and relationships, and reflect on their own learning. The first article I read titled *Let's Get Graphic: The Integration of Visual Representations to Demonstrate Learning* (Courtneay, 2020) described nonlinguistic learning as the storage of information using images, mental pictures, graphics, physical feelings, sensations, or experiences. It also stated that the goal of using nonlinguistic representations is to guide students into creating conceptual mental images and constructions.

The article states that the more learners that use both linguistic and nonlinguistic representations in their learning, the more students will be able to recall information quickly. It also talked about a series of studies that Haystead and Marzano analyzed where they found that there was a direct correlation between the incorporation of nonlinguistic representations and quicker, more accurate recall of learned information.

The second article I read titled *Making Science Visible* (Fetterman and Kozlowski, 2017) talked specifically about graphic organizers as forms of nonlinguistic representation. It mentioned that we as teachers need to provide our students with visual structures so that they can synthesize, organize, and store information long term. The article states that graphic organizers can help students form visual pictures that can help them to see patterns and relationships between ideas. It also says that graphic organizers help students to reflect on their learning which can lead to great discussions between peers because each student may come up with a different way of relating the content.

The article goes into detail about the types of graphic organizers listing some of the main categories as: Descriptive Patterns, Generalization/Principle Patterns, and Concept Patterns. The authors emphasize the versatility of graphic organizers stating that they can be used at the beginning of a lesson

as a way to preview vocabulary or a concept, during a lesson as a notetaking activity, or at the end of a lesson to demonstrate their understanding of the content.

I decided to use graphic organizers as a tool to assist me in teaching color theory to my students. We were able to create a graphic organizer that covered the color wheel, color family definitions and examples, tones, tints, shades, and we were even able to include a shading exercise. This strategy would help my students organize this information and acted as a resource for them to reference back to as they worked on their paintings.

Pre- and Post-Assessment

One of the assessment strategies I utilized during the personal space unit was pre- and post-assessments. Pre-assessments help draw students' focus to important concepts, telling them which concepts they need to pay special attention to during the unit. Post-assessments are a great way to measure student growth from the beginning to the end of the unit. The research article I read titled *Effects of Pre-tests and Feedback on Performance Outcomes and Persistence in Massive Open Online Courses* (Janelli and Lipnevich, 2021) talked a lot about the benefits of using formative assessment to aid instruction and the benefits that pre-tests had when it came to retention of information and performance on post-tests. The article stated that using pre-tests before instruction helped students to learn and encode important content that was taught in later lessons, even if the pre-test questions were answered incorrectly. The article also mentioned that pre-tests can help students to recall important information when tested on it again later on and that pre-tests provide students with feedback that can help them to identify areas that they need to focus on. Finally, tests highlight important information and concepts, telling students which parts of the lesson they should pay particular attention to.

I believed that pre- and post-assessments would be a great way for me to see which concepts my students understood and which concepts my students needed extra help with throughout the unit. I also

thought that this strategy would help me to measure my student's growth from the beginning to the end of the unit.

Critique/Peer Feedback

Peer feedback is a strategy that gives students a chance to become more involved in the learning process and allows them to be more reflective about their learning. The first article I read titled *Strengthening Dialogic Peer Feedback Aiming for Deep Learning in SPOCs* (Filius, Kleijn, Uijl, Prins, Reijen, and Grobbee, 2018) talked about peer feedback and the benefits of peer feedback, especially when a dialogue is created as a result of peer feedback. The article argues that peer feedback allows students to feel more committed, involved, and more likely to understand their own learning process. The authors stress the importance of interaction between the feedback provider and the feedback receiver. They also mention that the feedback receiver is not the only one who benefits from peer feedback. The feedback provider also deepens their own learning and gains valuable practice when it comes to learning how to reflect, think more critically, and may be able to evaluate their own work and make improvements.

The second article that I read titled *Self vs. Peer Assessment Activities in EFL Speaking Classes: Impacts on Students' Self-Regulated Learning, Critical Thinking, and Problem-Solving Skills* (Kumar, Soozandehfar, Hashemifardnia, and Mombeini, 2023) talked about the benefits of self and peer assessment. When talking about peer assessment, the article mentions that students often feel more involved in their learning. The article concluded that peer assessment can enhance a student's critical thinking skills, allow students to feel more reflective with their learning and allows more immediate feedback that is more relevant as it comes from one's peers.

We used peer feedback in the form of full class critique where each student was able to present their painting and receive feedback on their work. This allowed my students to hear a wide variety of opinions and gave them experience talking about art and receiving constructive criticism.

Rubric

The final assessment strategy that I used was a rubric. I used this not only as a tool to assess my students work, but also as a way to show my students the criteria that they needed to meet for the project. The article that I read titled *Doing Sociology, Learning Objectives, and Developing Rubrics for Undergraduate Research Methods* (Bhoomi, 2024) explains how rubrics can benefit different types of students and teachers. First, it can help students to self-asses their work during the drafting stages. Rubrics can also provide transparent grading criteria for each assignment. For high-achieving students, rubrics can serve as performance boosters and aid in their critical thinking and reflective skills. For instructors, rubrics can lessen the time spent evaluating student work and can help minimize personal biases when grading student work. It can also serve as a tool for reference during grading debates. Lastly, the article mentions that rubrics can reduce student anxiety, aid with providing feedback, and help improve self-regulation.

Participants

The demographics of my class consisted of one junior (10th grade), one sophomore (11th grade), and two Seniors (12th grade). In total there was one female and three males in the class and there were no students with Individualized Education Plans (IEP).

Methods and Materials

The materials necessary to complete this unit included online resources such as Google Slides as a way to present information to my students, Google Classroom as a way to collect assignments from my students, and Google Forms to collect data from my pre- and post-assessments. Other materials necessary include those used for our paintings such as 24x30 in. boards, acrylic paint, paint brushes, rulers, water cups, paper towels, pencils, erasers, sharpies, paper, and printed out reference photos.

The instructional strategies that I used for this unit included daily learning objective, providing feedback, and using nonlinguistic representations. My primary instructional strategy was using daily learning objectives and providing feedback. I used daily learning objectives to guide my students

throughout this multi-week project, giving them mile markers to help them manage their time, and hopefully alleviate some of their stress by making clear what our end goal was. I provided daily feedback as well to each of my students and we engaged in a full class critique midway through the project so that each of the students could receive some useful feedback as they were developing their projects. I also used nonlinguistic representations in the form of live painting demonstrations as well as color charts that we used as we worked on color theory. I also provided multiple examples of paintings and photographs that demonstrated the main ideas that we covered during the unit.

The assessment strategies I used included pre- and post-assessments, full class critique, and rubrics. I used pre and post assessments in the form of online quizzes that covered key topics that we discussed throughout the unit. We also engaged in a full class critique where everyone shared and received feedback on their paintings. Finally, I graded their artwork using a rubric that I designed.

We began this unit with a pre-assessment that covered topics that we would discuss throughout the unit such as color theory, painting techniques, groundlines (foreground, middle ground, and background), and atmospheric perspective. The results of this pre-assessment told me what topics I needed to spend more time on and what topics I only needed to briefly review, for example, I knew after the assessment that I needed to cover color theory and atmospheric perspective because my students missed most of the questions over that topic, however the data also showed me that I only needed to briefly review groundlines because my students answered most of those questions correctly. After the pre-assessment I then went over the rubric for our personal space painting with my students so that they were all clear on the criteria they needed to meet when creating their paintings. On day 2 my students created their grids on their boards and reference photos. On days 2-4 my students created their underpaintings. On days 5 and 6 of the unit I used nonlinguistic representations by having my students create a graphic organizer that covered the topic of color theory. On days 7-12 my students worked independently on adding layers and details to their paintings, during this time I would conference with

each of them at least one time per class period. On day 13 I implemented the peer feedback strategy by

having the class engage in a full class critique where they were able to share and receive constructive

criticism. On days 14-16 my students took the feedback they received on critique day and continued to

add layers and details to their paintings. Finally, on day 17 my students turned in their paintings and took

their post-assessment. This assessment contained questions that covered the same topics as the pre-

assessment however I did change the questions. I compared the data from the pre- and post-

assessments in order to measure my student's growth from the beginning to the end of the unit. On

each day of the lesson, the daily learning objective was posted on the board, so my students were aware

of what the goal for the day was.

Results: Data Analysis

The chart below (Figure 1) represents the data that I collected from the pre-assessment. The

bottom numbers represent the total number of correct points scored by my students and the numbers

on the left represent the number of students. The data from the pre-assessment told me that my

students did not have a firm grasp on some of the topics that would be covered during our Personal

Space Painting Unit. These topics included atmospheric perspective, and color theory, specifically, being

able to recognize color families and understanding the definition of tones, tints, and shades. The pre-

assessment data did tell me, however, that my students exhibited a firm understanding over foreground,

middle ground, and background. My students received an average score of 50% on the pre-assessment.

Figure 1

Personal Space Pre-Assessment

Average: 5/10   Median: 4/10 Range: Range: 3-7Points
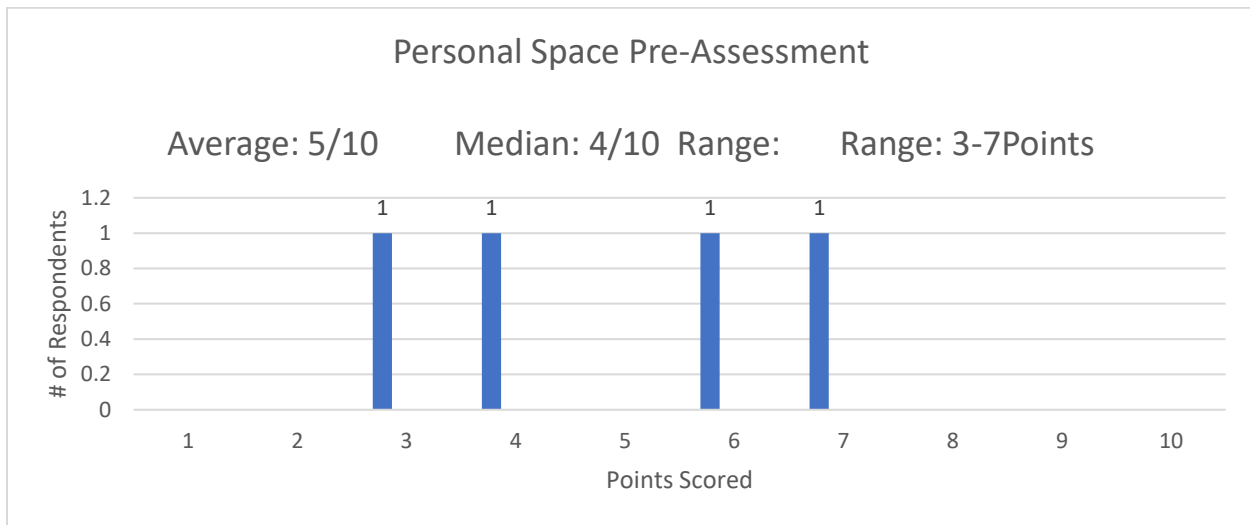
The chart below (Figure 2) represents the data that I collected from the post-assessment. The bottom numbers represent the total number of correct points scored by my students and the numbers on the left represent the number of students. The post-assessment data showed me that my students had gained a much better understanding of the content covered during the unit by the end of the unit. My students demonstrated a much better understanding over color theory, both in identifying color families and showing an understanding of the definitions of tones, tints, and shades. I also found that my students maintained their knowledge of foreground, middle ground, and background. I did find however, that my students still struggled with the concept of atmospheric perspective. My students received an average score of 85% on their post-assessments.

Figure 2

Personal Space Post-Assessment

Average: 8.5/10   Median: 8/10 Range: Range: 8-9 Points
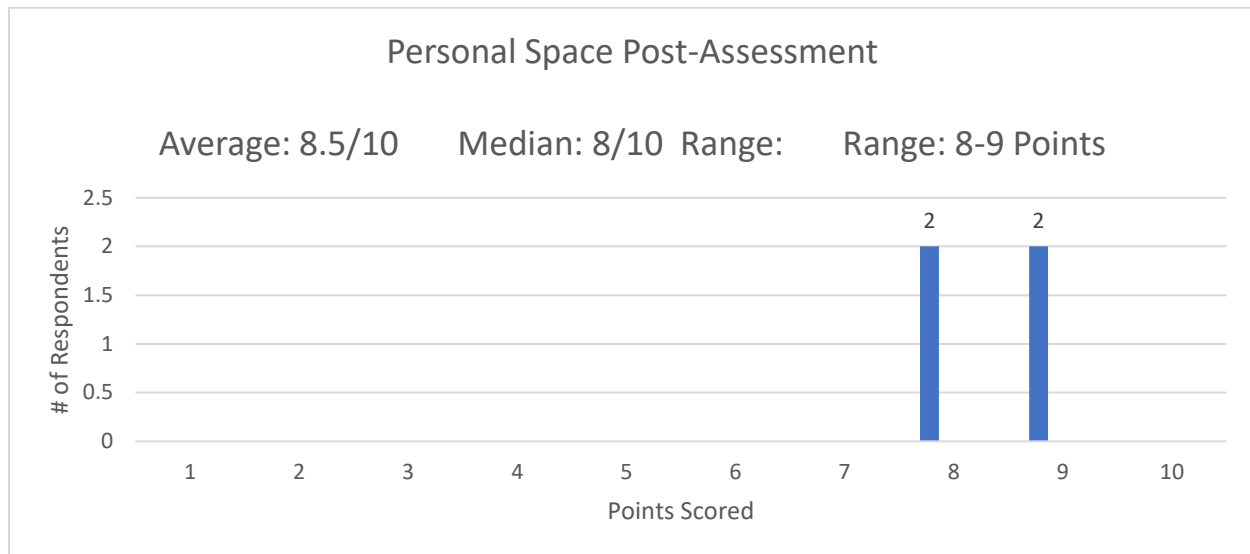
Discussion

The pre-assessment told me what topics students understood and what topics they didn't quite understand and helped gauge what I needed to cover more in depth in my lessons for the unit. For instance, the majority of my students understood the concepts of foreground, middle ground, and background, so I only needed to briefly review these topics in one of my lessons. On the other hand, I found that most of my students did not have a firm understanding of color theory. This told me that I needed to spend more time talking about color theory which led to a two-day lesson where we created a graphic organizer as a class that discussed topics such as the color wheel, color harmonies, and value (tones, tints, and shades). The post-assessment data showed me that the graphic organizer worked well in cementing my students understanding over color theory.

I found that my students responded really well to the class critique. At first, they were quite uncomfortable talking in front of a group, but with the use of some guided prompts, my students began sharing well-articulated and thoughtful critiques. After the critique I conducted a survey to get student feedback on the experience and found that my students thought the critique was helpful, enjoyable, and that they would implement the suggestions that they received on critique day in their work.

By the end of the unit, I concluded that the daily learning objectives appeared to be successful in helping my students to manage their time, stay on pace with the unit, and provide a clear goal for the day that my students could refer back to at any time. My students completed their paintings on time and I received little to no questions from my students about what was expected of them each day.

The post-assessment data showed me that overall, my student's knowledge over the topics covered during the unit grew substantially from the beginning of the unit to the end. More specifically, my students showed a firm understanding of color theory and painting techniques on their post-assessments compared to their pre-assessments where they had originally struggled with those concepts. It also showed me that my students maintained their understand of foreground, middle ground, and background. Lastly, the post-assessment data showed me that my students continued to struggle with the concept of atmospheric perspective. This told me that I did not cover that concept as sufficiently as I could have.

Conclusion

In conclusion, the data from the pre- and post-assessments as well as my own observations of my class tells me that the instructional and assessment strategies I utilized were successful in supporting my students in the areas I had intended. Daily learning objectives helped my students to organize their time and stay on pace with the unit. Nonlinguistic representations helped my students grasp the concept of color theory which they had previously struggled with. Peer feedback allowed my students to get involved in the learning process and offered them helpful suggestions that they could implement within their work. Lastly, the use of a rubric gave my students clear expectations as to what I wanted from their final paintings.

If I were to conduct this research again, I would choose a class that consisted of more than just four students so that I could collect more data to solidify my results. I also would teach this unit to more

than one class at a time so that I could have at least one group where I implemented the instructional

and assessment strategies and one group where I did not, this way I could compare the data.

References

Filius, R. M., de Kleijn, R. A. M., Uijl, S. G., Prins, F. J., van Rijen, H. V. M., & Grobbee, D. E. (2018). Strengthening dialogic peer feedback aiming for deep learning in SPOCs. *Computers & Education*, *125*, 86–100.

Fetterman, K., & Kozlowski, J. (2017). Making science visible. *Science Scope*, *40*(8), 26–29

Janelli, M., & Lipnevich, A. A. (2021). Effects of pre-tests and feedback on performance outcomes and persistence in Massive Open Online Courses. Computers & Education, 161, 104076.

Kelly, C. (2020). Let's Get Graphic: The Integration of Visual Representations to Demonstrate Learning. Virginia English Journal, 70(1), 1–10.

Kumar, T., Soozandehfar, S. M. A., Hashemifardnia, A., & Mombeini, R. (2023). Self vs. peer assessment activities in EFL-speaking classes: Impacts on students' self-regulated learning, critical thinking, and problem-solving skills. *Language Testing in Asia*, *13*(1), 36.

Orr, R. B., Csikari, M. M., Freeman, S., & Rodriguez, M. C. (2022). Writing and using learning objectives. *CBE—Life Sciences Education*, *21*(3), fe3.

Reed, D. K. (2012). Clearly communicating the learning objective matters! : Clearly communicating lesson objectives supports student learning and positive behavior. *Middle School Journal*, *43*(5), 16–24.

Thakore, B. K. (2024). Doing Sociology, Learning Objectives, and Developing Rubrics for Undergraduate Research Methods. Teaching Sociology, 52(1), 66–74. https://doi-org.leo.lib.unomaha.edu/10.1177/0092055X231170618

Appendix

Appendix A: Pre- and post-assessments

Personal Space Pre-Assessment

This is a pre-assessment to test your knowledge on themes that will be explored during the Personal Space Painting unit.

* Indicates required question

1. Email *

   _____

2. Name *

   _____

3. Email *

   _____

4. What is the definition of Tone in relation to art? *   1 point
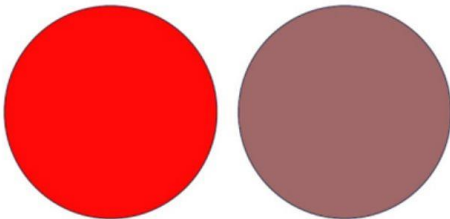
   Mark only one oval.

   ⬭ a musical or vocal sound with reference to its pitch, quality, and strength.

   ⬭ the relative lightness or darkness of a color (color + gray)

   ⬭ the general character or attitude of a place, piece of writing, or situation

   ⬭ the relative lightness or darkness of a color (color + black)

5. What is the definition of dry brushing? *   1 point

   Check all that apply.

   ☐ a painting technique in which most of the paint has been removed from the brush before application.

   ☐ a painting technique in which all of the paint has been removed from the brush before application.

   ☐ the process of drying ones brush thoroughly after washing out the pigment

   ☐ None of the Above

6. Given the colors red and blue-green, What is the third color needed to complete this split-complementary color scheme?   * 1 point

   Mark only one oval.

   ⬭ Violet

   ⬭ Red-Violet

   ⬭ Yellow-Green

   ⬭ Yellow-Orange

7. Given the colors Yellow, Yellow-Orange, and Orange, what is the fourth color needed to complete this analogous color scheme?   * 1 point

   Mark only one oval.

   ⬭ Red

   ⬭ Yellow-Green

   ⬭ Red-Orange

   ⬭ Violet

8. what is the part of a view that is nearest to the observer, especially in a picture or photograph?   * 1 point

   _____

9. What is it called when objects appear to become hazier, less-defined, and desaturated as they recede back in space?   1 point

   _____

10. Given the image above, Which circle appears to come forward in space and why?   2 points

    _____
    _____
    _____
    _____
    _____

11. Given the image above, why does the building appear to recede back into space?   * 2 points

    _____
    _____
    _____
    _____

Personal Space Post Assessment

This is a post assessment to gauge what you have learned from the Personal Space Unit.

* Indicates required question

1. Email *

   _____

2. Name *

   _____

3. Email *

   _____

4. What is the definition of "Tone" in relation to visual art? *   1 point
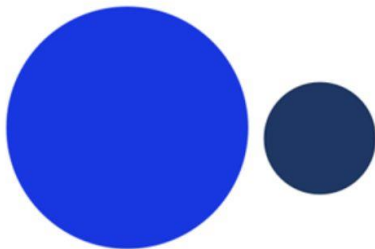
   Mark only one oval.

   ◯ the relative lightness or darkness of a color (color + gray)

   ◯ a musical or vocal sound with reference to its pitch, quality, and strength.

   ◯ the relative lightness or darkness of a color (color + black)

   ◯ the general character or attitude of a place, piece of writing, or situation.

8. what is the part of a view that is nearest to the observer, especially in a picture or photograph?   * 1 point

   Mark only one oval.

   ◯ background

   ◯ Foreground

   ◯ middle ground

   ◯ none of the above

9. What is it called when objects appear to become hazier, less-defined, and desaturated as they recede back in space?   * 1 point

   _____

10. Given the image above, Which circle appears to recede (go back) in space and why?   * 2 points

    _____
    _____
    _____
    _____

5. Given the colors orange and blue-green, what is the third color needed to complete this split-complementary color scheme?   * 1 point

   Mark only one oval.

   ◯ blue

   ◯ red-violet

   ◯ yellow-green

   ◯ blue-violet

6. what is the definition of dry brushing in relation to visual art? *   1 point

   Mark only one oval.

   ◯ the process of drying ones brush thoroughly after washing out the pigment

   ◯ a painting technique in which all of the paint has been removed from the brush before application.

   ◯ a painting technique in which most of the paint has been removed from the brush before application.

   ◯ None of the Above

7. Given the colors blue, blue-violet, and violet, what is the fourth color needed to complete this analogous color scheme?   * 1 point
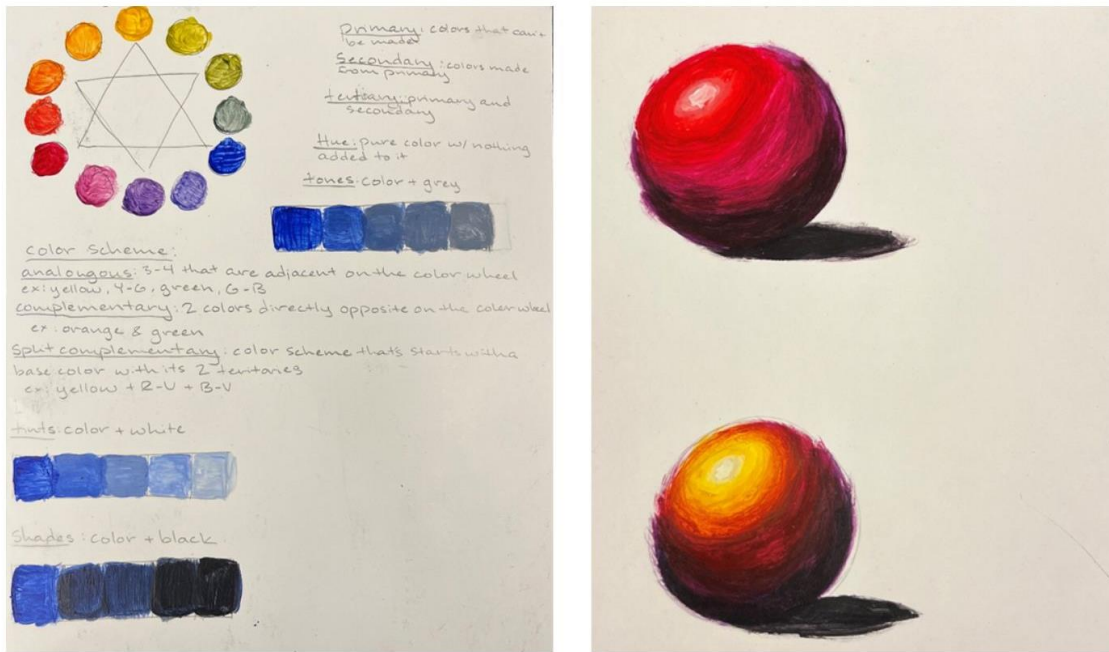
   Mark only one oval.

   ◯ red

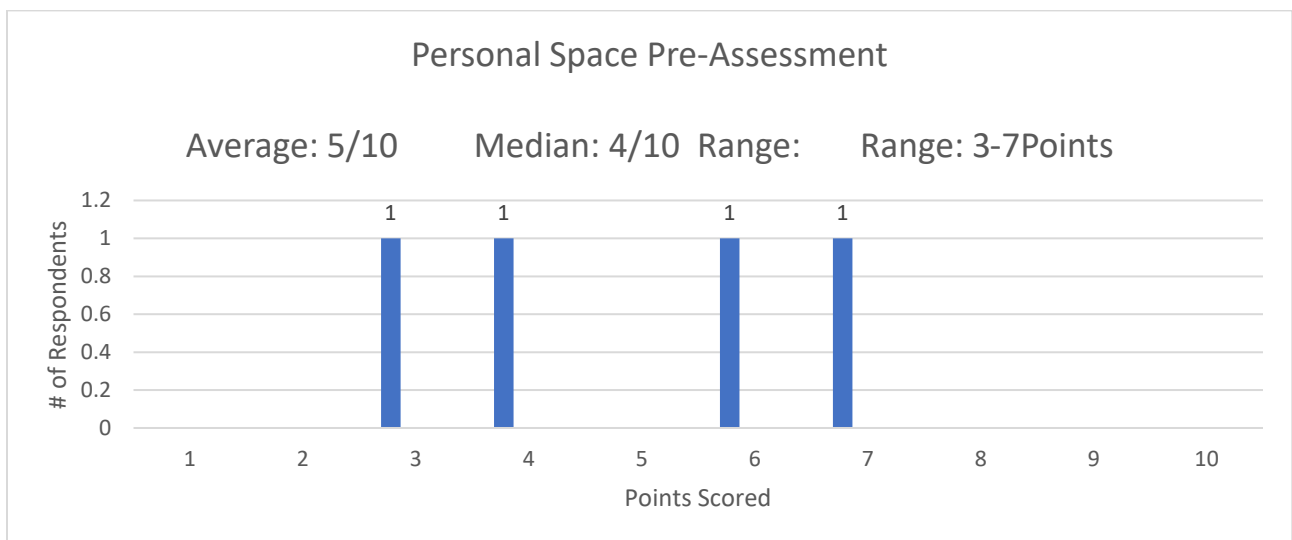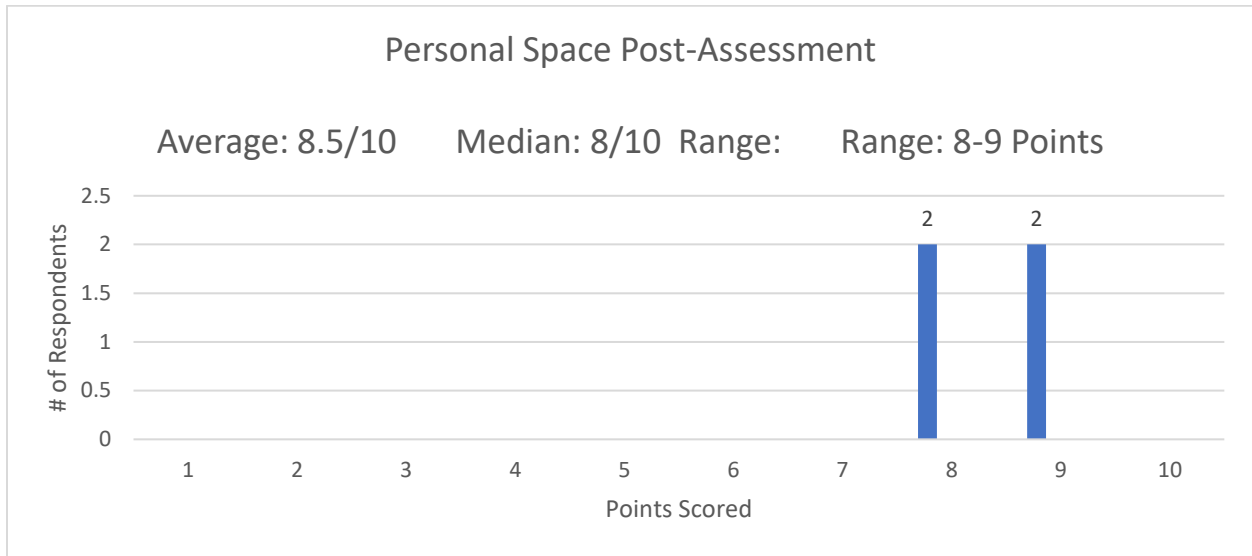   ◯ red-violet

   ◯ blue-green

   ◯ green-violet

11. Given the image above, why does the building appear to recede back into space? Give at least two reasons.   * 2 points

    _____
    _____
    _____
    _____
    _____

Appendix B: Color Theory Graphic Organizer

Appendix C: Pre and post assessment data:

Personal Space Post-Assessment

Average: 8.5/10   Median: 8/10 Range: Range: 8-9 Points

Appendix D: Rubric

Personal Space Painting
Art III

Name:

Criteria	Description	Points	Comments
Color	Utilize colors in a way that is aesthetically pleasing. Thinking about color schemes and how colors interact with each other.	/50	
Value	Create a wide range of values. 1/3 darks, 1/3 medium, 1/3 lights	/50	
Composition	Create a composition that is aesthetically pleasing. Must have foreground, middleground, Background	/50	
Craftsmanship	Create an artwork that is neat and well put together. No visible pencil or sharpie marks. Edges of lines are clean and purposeful.	/50	
Texture	Create the illusion of texture through the use of different brush strokes.	/50	

Final Score /250

Appendix E: Daily Learning Objectives

Learning Objective

Today I will be able to grid out my reference my image and my board and transfer my image onto my board.

Learning Objective

Today I will work on covering my entire board with my underpainting.

Learning Objective

Today I will create a graphic organizer that will contain visuals and vocab that will aid with color theory.