Implementation of Cross-Curricular Instruction: An Evaluation of Julia Marshall's Five Strategies of Integration Used by Contemporary Artists

By

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In the contemporary education climate, art is viewed as extra-curricular, and art teachers are urged to incorporate core academic subjects into their curriculum. In many cases this integration comes with the sacrifice of an authentic arts education. One researcher, Julia Marshall, suggests using strategies such as depiction, extension/projection, reformatting, mimicry, and metaphor from contemporary art to integrate non-art topics into the art classroom. This case study provides insight into the effectiveness of those strategies among a small group of upper level high school art students. Though the sample size was small there are some promising results that suggest that these strategies may have an impact on student performance in both their art and non-art course.

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Chapter 1: Introduction

With technological advancements and the creation of entirely new industries by creative thinkers like Steve Jobs, Bill Gates, and Mark Zuckerberg, researchers in the education industry are increasingly recognizing the necessity of incorporating the arts and creative exploration of topics in curricula of all areas (Taylor, 2019). This has led to a rise in education buzzwords like arts integration and STEAM (Science, Technology, Engineering, Art, and Math). With the increase in popularity of these movements, it is important for, as this paper specifically addresses, art teachers to understand the wealth of benefits and the oft-overlooked drawbacks of multidisciplinary, interdisciplinary, and transdisciplinary approaches to classroom curricula. This research will define some of these terms and provide an overview of benefits and drawbacks to teaching non-art disciplines in the art classroom and give examples of how other art teachers have incorporated these approaches in their own classroom.

First, this paper will look at the work of researchers who identify the many benefits of integrating non-art disciplines into the art curriculum. Also addressed is the looming worry that though these strategies may be helpful they have the potential for undermining the disciplinary practices of the arts. Guyotte and others demonstrate an example of this in their research “The notions of collaborative creativity and empathy provide a unique perspective on STEAM. While many focus on what the arts bring to the STEM conversation, we are also interested in what STEM might bring to the arts” (Guyotte et al., 2015, p. 31).

Research that examines the benefit other disciplines may have in the art class, is important to demonstrate the benefits to those teachers, like myself, cautious of

integrating non-art disciplines. Understanding and articulating what these terms specifically mean may help art teachers understand the goals of each multidisciplinary, interdisciplinary, and transdisciplinary. Clearly defining these terms and their goals may allow art teachers to make educated decisions on which strategy of art integration and implementing a STEAM inspired curriculum they may wish to try out.

Finally, this paper will give examples of research-based approaches to applying non-art disciplines in the art classroom. One such researcher bases her strategies on the approaches of contemporary artists. “This is art integration that explores art’s connections to the academic disciplines through artistic interpretation of their content, ideas, and practices” (Marshall, 2010, p. 14). Though the strategies Marshall discusses are for integrating other subjects, they are rooted in concepts used by contemporary artists. This and other research with action-based ideas for integration may be beneficial for those educators interested in jumping on the STEAM bandwagon.

Also discussed will be a brief historical recollection of cross-curricular integration into the arts. Though not implemented in the contemporary structure of integrative pedagogy, artists and art educators have been incorporating non-art concepts into art instruction as early as the Renaissance as an increased importance on representational work required a higher understanding of scientific and mathematical observations (Efland, 1990). The ability for the integration of art to benefit other areas led pedagogists like Horace Mann and Walter Smith to advocate for the inclusion of art in a public education (Efland, 1990).

In addition to presentation of past research, the focus of this project is to contribute new research which attempts to understand how integration can impact student motivation and proficiency. As a researcher I was drawn to the research of Julia Marshall who suggests that by looking to contemporary artists as a model there are five strategies they use for incorporating non-art content into their work. Using these suggested strategies this research will attempt to determine the effect these strategies have on student perception of motivation and proficiency in both their art and a chosen non-art course.

Statement of Problem

Students have difficulty making connections between topics discussed in different subjects. Educators have created solutions for this problem by developing several strategies in pedagogy including multidisciplinary, transdisciplinary, and interdisciplinary curricula. This integration of multiple disciplines has created a perception among many art teachers, myself included, that as these other subjects become more and more pushed in our curriculum that students will be sacrificing an authentic arts education.

Importance of Study

Despite my own feelings there is pressure at every level of education to integrate the “core” subjects’ curricula into my art classroom. By researching a technique for doing this that pushes the students to understand how these topics fit into art, rather than seeing how art can be a support for these topics, I will ensure that I integrate core subjects on my own terms rather than becoming a tool for core teachers to support their

subjects. In addition, the importance of this project lies in its potential effect on student performance and motivation.

Hypothesis

I think integrating other disciplines in art can potentially be used, not just to strengthen students' knowledge in those subjects, but also to further a student's art education. Marshall discusses five techniques contemporary artists use which incorporate interdisciplinary topics. By utilizing these strategies as the backbone of integration of other disciplines, students will still be receiving this authentic arts education while incorporating multiple disciplines. I feel by allowing students the choice of their chosen integrated topic, students will demonstrate higher levels of motivation in art, increased performance in that chosen coursework, and overall higher quality of art products.

Chapter 2: Review of Literature

Effect of Cross-curricular Implementation in the Art Classroom

An often-discussed benefit of the meshing of art and other courses is the improvement on motivation and performance in those connected non-art subjects. One example of this is the impact visual arts can have on the teaching of science as described by several researchers (Dhanapal, Kanapathy, & Mastan, 2014). In their study, Dhanapal, Kanapathy and Mastan (2014) used a qualitative research method to determine the effectiveness of arts integration within a science course. In the survey given to teachers, all four science teachers recognized that the integration of visual art is useful to science mostly citing an increase in motivation and understanding of the topic. Each of these four teachers stated they incorporate visual arts into their classroom frequently or quite often giving examples of how and what type of art they used (Dhanapal, Kanapathy, & Mastan, 2014). From this study and others (Diaz, 2016; Clemens, 1995), art clearly can have a positive impact on student learning in non-art courses. This leads to the potential negative, that art will become just a tool for teaching these courses and rob students of an authentic art education.

In the current political and educational climate, there is pressure on budget makers to trim the fat of the educational system, especially in states like North Carolina, which often involves eliminating teacher positions. The idea of arts integration, STEAM, or other buzzwords leads to the notion that this is a sufficient substitute to an art education with someone trained not just in education, not just in art, but in both fields. Smilan and Miraglia (2009) recognize the benefits of art education but stress the need for art educators with a hybrid studio-based art education, as well as education in art

pedagogy. Furthermore, the discussion of how art teachers themselves view arts education pedagogy can have an impact on how art should be integrated into other courses. According to Smilan and Miraglia (2009), art teachers often fall into two extremes, those that focus on studio practice and aesthetics, and those who focus on art as an expressive or therapeutic process. The solution offered is an AAI or Authentic Arts Integration specialist. While Smilan and Miraglia make strong points for the necessity of AAI specialists in schools, the practicality of this is idea I would question. With the cutting of actual art teachers, the ability to hire another position to instruct on how arts integration should occur is unlikely. The training of art teachers as AAIs, which is also addressed, seems to be a more practical approach to ensuring authentic arts integration. However, this concept would increase the workload for existing art teachers, or potentially have them shift from teacher of art to assistant teacher that ensures teachers are teaching art (Smilan & Miraglia, 2009).

Despite the possibility of losing an authentic art education, the concept of arts integration is not entirely negative. There is significantly more research that outlines the benefits of art integration rather than the drawbacks, even from an art educator's perspective. These benefits include better motivation from students, an increase in the visibility of art education as vital to the school landscape, and potentially, better quality art production.

Some of these benefits are enumerated "Working Together: A Case Study of a National Arts Education Partnership" by Bernard W. Andrews (2016). That research presented a case study focused on evaluating educational partnerships in the arts industry. Specifically, several projects are evaluated based on in-depth interviews with

three categories of participants, artist, teacher, and project coordinator. Rather than review the specific examples in that project, this research will review the elements of chapter four “Arts Integration.” The two main topics in Andrews’ chapter “Arts Integration” are the types of integration described by Andrews as a *learning axis*.

Andrews includes five levels of an arts learning axis which describes five different types of arts learning: discipline-based, interdisciplinary, field-based, multidisciplinary, and integrated arts. Each of these represents a different level of arts involvement within the field of arts education. The first, discipline-based, is described as learning in the arts, which involves learning art-specific topics, like elements of principles of art. Interdisciplinary, is described as learning within the arts, “...complimentary learning occurs in the arts and across the curriculum. For example, the principles of tension and release can be studied across several curricular subjects” (Andrews, 2006, p. 33). Field-based is described as learning about the arts, which may take the form of a gallery or museum visit. Multidisciplinary is described as learning with the arts, this is learning about a single topic but individually in multiple disciplines. Integrated arts is described as learning through the arts, or when the arts are used as a tool for teaching other curricular topics (Andrews, 2006).

Additionally, Andrews addresses the benefits of arts instruction, of which he lists five: self-efficacy, artistic thinking, transformation, authentic learning, and engagement. Using survey responses from all three groups of participants in the study he is citing, Andrews asserts, “The positive feedback…enabled students to express themselves more fully and feel good about themselves” (Andrews, 2006, p. 37). Artistic thinking is attributed to a cognitive change evidenced by students’ participation in learning in visual

and different textual ways not normally seen in the general classroom curricula. Andrews describes transformation as being helped "...to adjust to the demands of school life, both academic and social, more effectively" (Andrews, 2006, p. 38). While those benefits rely heavily on evaluating and speculating on students' artistic expression, two benefits particularly relevant to this research are authentic learning and engagement. First discussed in Andrews' article is authentic learning, making the observation that learning from artists provided the students with a more authentic arts education than traditional classroom arts experiences. Andrews' states, "When the general classroom teacher does include the arts within instruction, the activities students engage in during instruction tend to support learning in non-arts activities rather than focusing on discipline-based arts learning" (Andrews, 2006, p. 39). Finally, all three groups of participants reported that students were more engaged when learning through the arts with Andrews saying, "Their [students'] focus, concentration, and time-on-task improved considerably when participating in authentic arts activities throughout the projects" (Andrews, 2006, p. 40).

Although this project emphasizes the importance and effectiveness of learning through the arts in a non-art classroom the findings on both engagement and authenticity revolve around the use of arts specifically and provide evidence that integration within the arts classrooms can provide similar impacts to student engagement while maintaining the authenticity of an arts education seen in this project. Though students in this research project are not engaging directly with artists, utilizing the same strategies as contemporary artists and looking to contemporary art for examples may provide an authentic arts experience.

Examples of Authentic Arts Integration

While this research is evaluating the effectiveness of one specific strategy for cross-curricular integration in one specific art room, there are other examples of arts integration where individual teachers, departments, schools, and even districts have committed to authentic integration of art and other curricula.

Arnold's (1996) opening statement states that, "Freedom to express your beliefs and hopes is central to success throughout life" (p. 21). This assertation is exemplified in not only the stated message of the Ashley River Creative Arts Elementary School that Arnold was writing about, but also in the integration of arts into their curriculum. She discusses the reasons, benefits, and examples of arts integration at the Ashley River School. Arnold's article, like the Ashley River School, begins with meeting Maslow's hierarchy of needs.

> For Maslow, the normal process of human motivation requires satisfying rudimentary needs for food and shelter first. Once these needs are met the needs for love and understanding become essential. And finally, after all the lower needs have been accomplished, the individual ascends to the top of the hierarchy to fulfill the need for self-expression and creativity. (Arnold, 1996, p. 22)

The Ashley River School meets not only the basic needs for food and shelter, but through their arts integrated curriculum meets the top hierarchical need. One specific way these needs are met is collaboration throughout multiple facets of the school. Collaboration between administration and educators to support experimentation and

professional growth, collaboration between educators, and collaboration between school staff and students.

An example Arnold discusses about arts integration and collaboration in the learning process is the topic of war which is explored in the themes of Picasso's *Guernica*. Arnold describes how students choose their own mode of learning. Some students choose traditional research about events of the war, some use performance to reenact the events. The learning experience, Arnold says, ends with a reflective process that may include poetry, journal writing, and other reflective activities to provide an alternate ending to that which is seen in Picasso's work (Arnold, 1996).

While the Ashley River School provides an example of a school making a radical transformation integrating the arts throughout their curricula, Eileen Mackin, Robert Mackin, John Obremski, and Katherine Micks (2017) outline a district wide initiative by the Everett Public Schools in Massachusetts to commit to arts integration. Within their article Mackin et al. focus on two successful project examples which place an emphasis on art outside of the traditional art classroom. In addition, they also discuss challenges, outcomes, and reasonings for their choice to commit to arts integration.

The two example projects discussed represent two different classroom scenarios. In one language arts course, Keith Spencer teaches students painting and construction techniques to create puppets which are used to perform an interpretation of the story of Daedalus and Icarus. Art techniques utilized planning sketches, enlarging a drawing using a projector, dry brushing, and construction (Mackin et al., 2017).

Teachers in this district were not instructed to implement art with no arts education themselves. Fifty teachers from the Everett district attended a summer institute hosted by master teaching artists at the Rhode Island School of Design. Mackinet al. (2017) highlight a joint STEM lesson co-taught by social studies teacher Lisa Norberg and science teacher Joe Lento. This lesson, which pulled directly from that professional development, taught students about an ancient hunting tool called an *atlatl*. Norberg and Lento then primed their students with preliminary instruction from a guest instructor. The primary art technique taught in this lesson was construction, as students were required to create their own design for a hunting tool, similar to the atlatl (2017).

The Everett Public Schools district as discussed by Mackin et al. (2017) could serve as an ideal model for arts integration for three main reasons. First, the effort of an entire district to back an initiative is commendable in a time where many districts are emphasizing core test scores and teaching only tested standards. Additionally, the Everett district participated in professional development led by experts in both art and education, even with these experts problems can arise, and without them their initiative may have gone the way of many other professional development initiatives. “But even with the in-depth, hands-on training that teachers have received, it hasn't been easy to design truly successful arts-integrated lessons, and planning them has required intensive collaboration that reaches across departmental boundaries” (Mackin et al., 2017, p. 33). Finally, their results demonstrate not only how arts help to improve perceived student engagement, but also improvement in standardized test scores “…since the arts integration initiative began, student performance has improved significantly in the schools where Keith Spencer and Lisa Norberg teach, with both

schools moving from Level Two to Level One status in the Massachusetts rating system" (Mackin et al., 2017, p. 33).

Timeline of Integration

Through Prehistory, Ancient Greece, Ancient Rome, and the craft guilds of the middle ages, art was not taught integrated into other subjects and often during those times art was taught as a highly specified craft rather than in general education. Examples of arts integration can be found as early as the Renaissance. During a time when aesthetic values were moving towards imitationalism, the incorporation of geometry, perspective, and anatomy in the art curriculum would be necessary. This is evident when looking at the anatomical drawings of Da Vinci and the accuracy in perspective achieved by Massacio. After the Renaissance, the trend of incorporating math and science topics continues into the French Academies. On the topic of art education in the French academy Efland (2010) states, "Their petition contained an outline of the program of art education that would be carried on by the academy, which included the teaching of architecture, geometry, perspective, arithmetic, anatomy, astronomy, and history" (p. 36). The incorporation of these topics in the French Academies is important, not only because it is an historical example of cross-curricular education, but it also demonstrates how non-art topics are used to support art rather than art used to support other subjects.

During the beginnings of drawing education in public schools, in the early 1800s, we see a resurgence in cross-disciplinary instruction with the Pestalozzian method of drawing instruction. Developed as a method based on natural progression and observation, Pestalozzi's methods were, like the art of the Renaissance, rooted in

geometry. Pestalozzi had students begin by copying lines and dividing them into sections, then progress to reproducing angles, and later geometric forms. The mathematical terms were viewed by Pestalozzi to be the base of drawing, "'lines, angles, and curves are the foundation of the art of drawing.' These were the simplest elements in the vocabulary of visual forms" (Pestalozzi, as cited in Efland, 1990, p. 80).

The next stop on our timeline is 1844 with Horace Mann, who advocated for the instruction of drawing to the Massachusetts Board of Education. One belief held by Mann was the connectedness of writing to drawing. Mann believed that the development of drawing skills concurrently with a student learning to write would expedite that process (Efland, 1990). As compared the French Academies which utilized non-art topics to advance the art classroom, Mann is demonstrating the use of art as a tool for benefiting more important subjects. Despite this benefit, as well as articulating the economic benefits of training artists for the manufacturing field, Mann was unable to convince Massachusetts Board of Education of the necessity of art courses, specifically drawing, in public schools.

A contemporary of Horace Mann, Walter Smith was continuing the efforts of meeting the needs of Massachusetts public schools. After the Massachusetts Drawing Act of 1870 which mandated that drawing be taught in Massachusetts schools in towns with populations larger than 10,000, Smith developed both textbooks and plans for the instruction of industrial drawing in Massachusetts public schools. An essential belief of Smith was the use of regular classroom teachers to teach drawing. In addition to the economic values stated by the drawing committee (Efland, 1990), Smith believed this was essential in the success of the drawing program.

> Who is to teach drawing in public schools? To this there can be but one reply; which is, There can be no special teaching of drawing as a special subject, any more than of writing or arithmetic as special subjects; but the general teachers themselves must learn and teach elementary drawing to the children in the same way as they learn to teach other subjects. (Efland, 1990, p. 103-104)

Despite Smith's expectations that art is integrated into the general classroom and general school day, his *Plan and Graded Programme of Instruction in Drawing for the Public Schools of Massachusetts* does not promote the integration of art into those other subjects. As in the past integration does occur, specifically in Smith's program, because there is a heavy focus on perspective, mathematical precision in measuring, and the understanding of geometric terms (Smith, 1879).

Moving into the 20th century the rise of Expressionism and the child art movement brought with it a focus on personal expression in art education. "Franz Cizek in Vienna, Marion Richardson in England and their counterparts in the United States began to establish an art pedagogy based on the premise that children are artists and that their art, like all art, is inherently valuable" (Efland, 1990, p. 195). The focus on child art as inherently valuable led to a pedagogical focus on educating students by providing them with supplies and an environment conducive to art creation. Lack of influence on student product would translate to a lack of focus on integration. Students were encouraged to express themselves in terms of their own experiences and feelings rather than subject matter rooted in their understanding of other subjects. On the topic of Cizek, Efland would have this to say: "…he did not introduce children to those adult concepts that he thought unsuitable for them, such as realistic color schemes (Efland

1990, p. 198). Though the focus on child-centered art was a dominant focus of the early 20th Century, Ulbricht outlines several programs during the 1920s and 30s which implement an art integrated curriculum. These programs include in 1926 the Teachers College Lincoln School and from 1924-1930 a curriculum in Houston City Schools which allowed teachers to relate subjects according to larger life themes like, "industrial revolution," "primitive life," or "expanding environments," most of which were derived from social studies concepts (Ulbricht, 1998).

Later in the 20th Century, arts integration becomes recognized as beneficial in synthesizing the information learned in school.

> It may be necessary for the pupil to acquire habits piecemeal, to develop a skill bit by bit, and to gain knowledge by the general process of labor; but education is incomplete until these are integrated with themselves and with life" (Dutton & Snedden, 1924, p. 330).

This early quote on the topic of arts integration was written at a time when public schools had not yet reached an adequate level of effectiveness.

For obvious reasons, there is much more research available about the later 20th and 21st Centuries' strategies and philosophies on cross-curricular integration. Within this time period, educators have begun to explore the nuances of not only the types of integration but also the processes for integration. The growth of the tech industry and the demand for creative individuals in those fields has brought a focus on incorporating various strategies for implementing cross-disciplinary curricula.

Defining Various Cross-curricular Approaches

Addressing the benefits discussed above within the art classroom is not a new or novel concept. Integrated education has been utilized by schools since the early 20th century. “Between 1924 and 1930 an integrated curriculum was designed for the Houston City School teachers” (Ulbricht, 1998, p. 14-15). Though art was not the primary focus of this and other early examples of cross-curricular education, it was included as needed. Later in the 20th century arts integration began to manifest as related-arts education. Ulbrecht discusses the influence of a curriculum developed at Central Midwest Research Educational Laboratory (CEMREL), “Although the CEMREL program was never mandated, the related-arts education concept was put into practice in many schools through the individual efforts of teachers who developed arts classes and units on their own” (Ulbrecht, 1998, p. 15).

More recently cross-curricular education has manifested with new terms beyond just “arts integration.” Many of these terms can be found in Harden’s *The integration ladder*, a tool for curriculum planning and evaluation (Harden, 2000). This section will articulate the subtle differences of multidisciplinary, interdisciplinary, and transdisciplinary education. This clear differentiation will allow teachers to evaluate each and determine which contemporary strategy may best suit their classroom.

The differences within each of these strategies lie at the level of mixing between each subject utilized. Multidisciplinary education involves separated disciplines and identifying and addressing the connections between disciplines within their own defined courses. Park and Son (2010) paraphrase Garner (1995) when defining multidisciplinary as “a combination of various disciplines as independent and separate components of

learning...” (p. 2). This may involve collaboration among instructors but does not involve cross curricular collaboration between students. In short multidisciplinary education is the incorporation of cross curricular topics into their own discipline, which may involve collaboration with professionals or other educators from that discipline.

Interdisciplinary education, unlike multidisciplinary, involves adding cross curricular information. Interdisciplinary education is integrative, completely integrating topics from cross curricular disciplines within the classrooms (Spelt et al., 2009). This integration of multiple disciplines within each class can help provide students with connections across disciplines. One example of this I have seen is Summit Charter School in Cashiers, North Carolina, which incorporates *Place-Based Education* where teachers in all disciplines incorporate environmental learning opportunities in their curricula (Summit Charter School, n.d.). This consistent integration of cross curricular instruction provides students with a continuous topic of education from which they can make connections to more disciplinary subjects like art or science.

In their discussion of a specific example of transdisciplinary education, Lauritzen and Jaeger (1994) define transdisciplinary education as “transcendence beyond the boundaries of traditional disciplines” (p. 581). Transdisciplinary educational strategies reject completely the defined parameters of disciplines and instead focus on viewing educational topics from a more wholistic approach. This seemingly radical idea is exemplified in Lauritzen and Jaeger’s article where they utilize Hawthorne’s *Pine Tree Shillings* to develop a transdisciplinary curriculum that teaches not only language arts, but also mathematical standards, and social studies standards (Hawthorne, as cited in Lauritzen & Jaeger 1994). Within the discipline of mathematics, in 2012 North Carolina

began to adopt integrated math standards. These new standards ignored the specific disciplines of algebra, geometry, and trigonometry which were the divisions to courses prior to these standards, and instead incorporate topics from each of these disciplines in Integrated Math 1, 2, and 3.

Defined together here, each approach - multidisciplinary, interdisciplinary, and transdisciplinary - are not completely unrelated, but are not interchangeable synonymous terms. Understanding the different levels of cross curricular integration within each can provide art educators with valuable knowledge to assist in planning non-art integration into their course. Whichever strategy or combination of strategies teachers may choose to utilize, incorporating some level of cross curricular integration is necessary to achieve the benefits evaluated earlier in this chapter. Instead of meeting the demand for more intense integration as those who subscribe to interdisciplinary and transdisciplinary pedagogy would expect, an implementation of a cross-disciplinary or multidisciplinary curriculum would be most realistic and beneficial for students and educators being introduced to implementing an arts integrated curriculum.

Chapter 3: Research Design

Utilizing a case study was the best design for evaluating the qualitative elements of this research, as well as evaluating the data as students decided individually what topic of integration they utilized. Likert scales collected quantitative data. Quantitative data was obtained based solely on each student's perceived level of motivation and understanding of their chosen non-art topic. In addition to the individual student responses and teacher observations, the first and final artwork created for that project was evaluated using a rubric (see Appendix F), with the goal of establishing the amount of growth completed throughout the project. The Art Production Rubric was designed as a general artwork rubric to allow for application to each student's individual project. That allowed me and a non-art teaching colleague to evaluate the students' work objectively without significant focus on use of realistic style choices. Utilization of a general rubric also allowed for a broad range of acceptable art products including not necessarily traditional classroom tools, graphite, paint, etc. The rubric was used to determine whether each student's artwork is unsatisfactory, needs improvement, satisfactory, or outstanding in several categories. The categories evaluated were the student's use of elements and principles, experimentation, effort and perseverance, and craftsmanship. Each of the four levels was assigned a point value where one is unsatisfactory and four is outstanding, and each artwork can earn up to a total of sixteen points. The first and last artwork of each student was compared to provide another indicator of growth in artistic proficiency.

Participant Characteristics

Participants in this study were sourced from two different spring semester courses taught at high school in a rural county in the piedmont region of North Carolina. Proficient Art and AP Art (some students were submitting a 2-D Design portfolio and some a Drawing Portfolio) are two of the highest-level art courses at this high school. These courses were chosen as they are traditionally offered to students in at least 11th grade, which means they have completed a state mandated research paper and should have received some level of analytical writing instruction which may have been beneficial in responding to some of the survey questions used to gather data in this study.

Within these two courses twelve unique students were enrolled. Of these students five students were enrolled in Proficient Art, which was taught in the same classroom as an intermediate level course, five were enrolled in the AP Art course, and two were enrolled in an AP Art course embedded into a first period Beginning Photography course. These twelve students were made up of eight white students, two multi-racial students (two or more races), one black student, and one Hispanic student. Ten students were in twelfth grade and two were in eleventh grade, ten were female and four were male, one had English as a second language but had placed out of ESL assistance, and two had ADHD. As the study was unrelated to many of these demographic factors, other than age/grade level, they were not considered when obtaining the sample of participants.

Selection Process

The funding, reason for, and the small scope of this pilot project created a situation where selection was based solely on students' enrollment in each of the courses mentioned above. Though not all students consented to their specific responses and use of their work associated with the project to be used in this publication, all students participated in each portion of the study. While different than instruction historically used within these courses all required teaching standards were still met while incorporating the instruction strategies used in the study. Students at this level have also taken at least two art courses; this experience and the resulting portfolio of past work allows for the student to think to past experiences and work to evaluate their performance growth in art.

Method of Data Collection

The focus of this project relates to motivation and impact on student understanding of a topic. This focus led to the use of a questionnaire or survey which was completed by the student. Motivation being the general desire or willingness of someone to do something, I felt the best measure of motivation was each student's own perception of their motivation. To evaluate each student's proficiency in art production, each student's artworks were evaluated using a rubric based on four scoring criteria: use of elements and principles, experimentation, effort and perseverance, and craftsmanship. A secondary effect of this study was student understanding of a given topic. Without the resources to objectively evaluate each student's chosen topic, I also felt as though the students' own perceptions would be sufficient evidence of growth for the purposes of this study.

Instruments and Outline of Operations

Upon entry to the courses, each student selected a non-art topic which they were interested in. Students were instructed to choose something relating to a specific school subject; however, the topic could be more narrowed and specific than general school subjects. Students then completed a pre-instruction survey which allowed them to rank and explain their level of motivation in both art and their chosen non-art subject. Students were also able to rank their perceived performance level in both art and their non-art subject. Students then completed five artworks utilizing each of Julia Marshall's five ways contemporary artists integrate. In order to successfully implement each of these methods and techniques, students were expected to complete research on their chosen topic to be completed in conjunction with several planning sketches for each artwork. After completing all the assigned artworks students completed a post-instruction survey. This final questionnaire features similar questions to the pre-instruction survey but allows students to discuss the specifics of their artwork and research processes.

Format of and Explanation of Questionnaire

In the pre-instruction questionnaire, students were first asked to provide their name, because this is a case study and is individual to each student rather than focused on quantitative data; anonymity of responses was not necessary. Students were then asked to rank motivation in both art and their non-art subject. Students did this using a Likert Scale and rated between one and ten where one is unmotivated and ten is a high level of intrinsic motivation. Students ranked proficiency in their art course by using a

Likert Scale ranging from one to five where one is low skill level and five is highly skilled at most assignments/media. Students also ranked their proficiency level in their non-art topic on a Likert Scale rated between one and ten where one is constantly poor performance on classroom measures of proficiency and ten is consistently high performance on measures of proficiency. Though many students did not choose a subject specifically taught within our school, most chose topics related to courses in our school. For example Student Three chose aeronautics which, though not specifically taught at our school, relates closely to science and advanced level math courses. Students were also asked to give explanations for each of these rankings. Though the ranking is not as scientific as a standardized assessment, for the purposes of this study it was sufficient. See Appendix D for "Pre-Instruction Survey."

The post-instruction questionnaire follows the same format for the first section to create consistency in pre- and post-intervention data. The post instruction questionnaire then asks questions specific to the artwork created throughout the course of this project. The three prompts for each of the artworks are: Describe your (insert name of integration technique) artwork. What kinds of research did you need to complete the (insert name of integration technique) artwork? Did this research/execution of the (insert name of integration technique) artwork deepen your understanding of the chosen non-art topic, if so, how? Students were then asked these follow-up questions about their opinions on this process: Did you find this format of curriculum organization was conducive to giving you as the artist freedom to make choices about your artwork? Was the common conceptual connection of all your artworks an asset or a hinderance for your production of art this semester? What

suggestions would you provide for conducting this type of curriculum organization again? Do you have any other comments, questions, or concerns? See Appendix E for "Post-Instruction Survey."

Chapter 4: Results

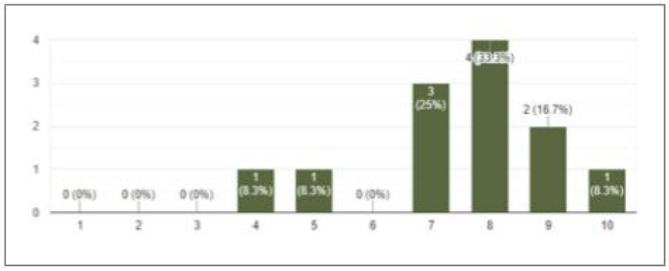
Quantitative Data Collected from All Participants

In the pre-instruction and post-instruction surveys students were asked the following questions to gather quantitative data about their motivation and proficiency in both their art courses and chosen non-art topics. For each of these, students utilized a Likert scale to determine their own perceived rating for each: Rate your level of motivation in your current or previous art courses, which they did from zero to ten. Rate your proficiency in your current or previous art course, which they did from zero to five. Rate your level of motivation in your chosen non-art subject, which they did from zero to ten. Rate your proficiency in your chosen non-art subject, which they did from zero to ten.

The following graphs (Figures 1-4) demonstrate those responses, first in the pre-instruction survey:

Figure 1

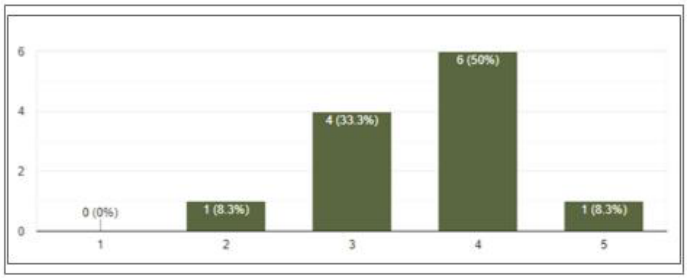
Pre-instruction Motivation in Art



Note: Graph depicts student rating on Likert scale of 1-10 rating their Motivation in their current or previous art courses where one is unmotivated and ten is highly motivated.

Figure 2

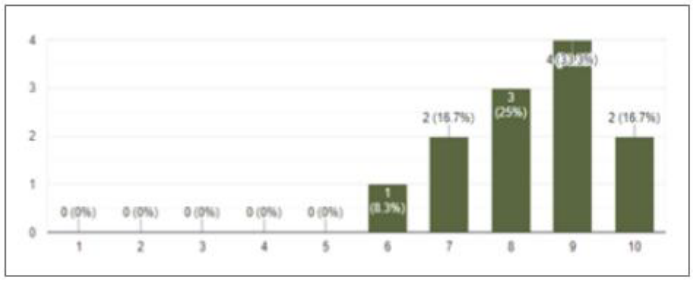
Pre-instruction Proficiency in Art



Note: Graph depicts student rating on Likert scale of 1-5 rating their proficiency in their current or previous art courses where one is not proficient and five is very proficient.

Figure 3

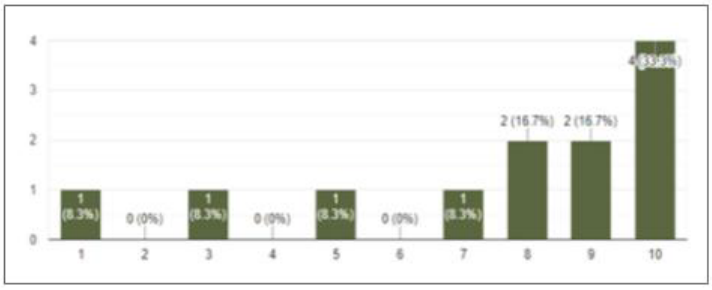
Pre-instruction Motivation in Non-art



Note: Graph depicts student rating on Likert scale of 1-10 rating their motivation in their chosen non-art topic where one is unmotivated and ten is highly motivated.

Figure 4

Pre-instruction Proficiency in Non-art

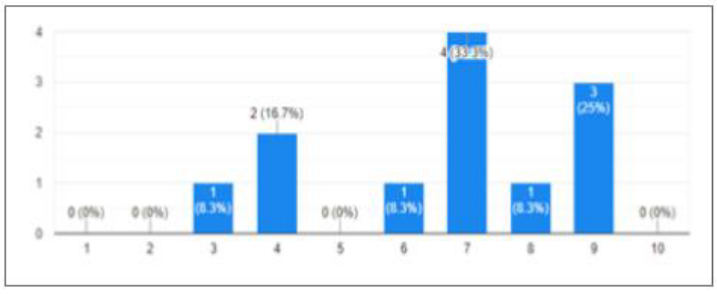


Note: Graph depicts student rating on Likert scale of 1-10 rating their proficiency in their chosen non-art topic where one is not proficient and ten is very proficient.

Figures 5-8 graph the responses to the post-instruction questions.

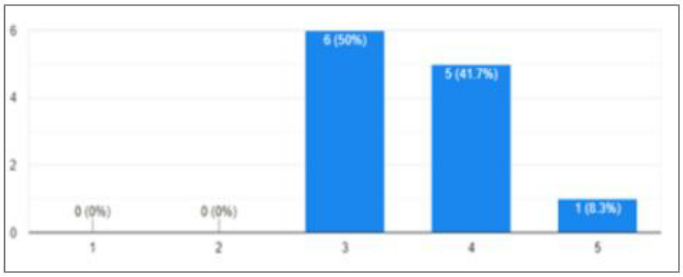
Figure 5

Post-instruction Motivation in Art



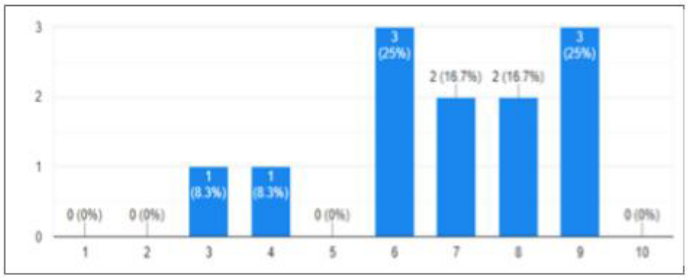
Note: Graph depicts student rating on Likert scale of 1-10 rating their Motivation in their current art course where one is unmotivated and and ten is highly motivated.

Figure 6
Post-instruction Proficiency in Art



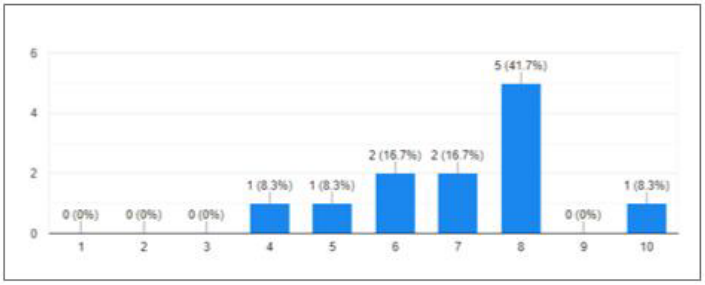
Note: Graph depicts student rating on Likert scale of 1-5 rating their proficiency in their current art course where one is not proficient and and five is very proficient.

Figure 7
Post-instruction Motivation in Non-art



Note: Graph depicts student rating on Likert scale of 1-10 rating their motivation in their chosen non-art topic where one is unmotivated and ten is highly motivated

Figure 8
Post-instruction Proficiency in Non-art



Note: Graph depicts student rating on Likert scale of 1-10 rating their proficiency in their chosen non-art topic where one is not proficient and ten is very proficient

To determine the amount of overall growth in each category I utilized an average of responses in the pre-instruction survey for each category and subtracted that from the average of responses in the post-instruction survey for each category. The average response for motivation in their art course decreased slightly from an average 7.5 out of 10 in the pre-instruction survey to an average 7.08 out of 10 in the post-instruction survey. The average response for student perceived proficiency in their art course remained the same at an average 3.58 out of 10 in both the pre-instruction and post-instruction surveys. Though there is little change to pre and post-instruction averages in art categories, the results of the non-art categories show a slight decrease in both motivation and proficiency. Students rated their motivation an average 7.5 out of 10 in the pre-instruction survey which decreased almost a whole point to an average 6.67 on the post-instruction survey. Similarly, the student perceived proficiency in their non-art

subject decreased two points from an 8.33 out of 10 on the pre-instruction survey to a 6.83 out of 10 on the post-instruction survey.

Case Studies

For this section I will discuss the demographic information, the specific pre-instruction responses, the specific post-instruction responses, and researcher instructor observations of one student from the first period AP course integrated into a beginning photography course, one student from the Proficient course integrated into the Intermediate course and one student from the standalone AP course. I will present these students' cases at random. Students were chosen for case studies by designating each student a number and using a random number generator to select one student per art course.

Student One

This student, a senior female student has taken 4 previous art courses including Beginning Art, Beginning Photography, Proficient Art, and AP 2-D Design. This student has shown a high level of proficiency in concept and design and a moderate level of proficiency in representational drawing and painting and has made A's in all her previous art courses. This student was also enrolled in two other AP courses AP Chemistry and AP Statistics. Over the course of the semester Student One accumulated six, which is the maximum for our school, unexcused absences as well as several excused absences which is elaborated on later.

From Student One's pre-instruction survey we can see a five out of a possible ten level of motivation at the beginning of her current semester in art. The student

attributes this to an oversaturation of art classes in her high school career. “I have had an art class every semester for the past two years and I feel like I have no ideas left in my brain that will produce good or well executed artworks.” This type of cause for lack of motivation is one which I hope to combat by having the student conduct research on their chosen topic, which when accompanied by Julia Marshall’s techniques for integration should provide the student with a less stressful well from which to pull subject matter for future works. In addition to her level of motivation Student One rated their proficiency at a moderate three out of a possible five with the explanation that they do not experiment with new media and subject matter. “I am good at doing certain things but I like to stay in my comfort zone so I don't branch out in the art field. I need to learn new techniques and perfect using the elements and principles in all my artworks.” As mentioned previously I feel this type of project and instruction will not be more beneficial than other methods of art instruction, as the students will maintain choice in medium and technique which may lead to the student catering to their strengths.

In addition to questions about their performance and motivation in their art courses, students were also asked to rate their performance and motivation in their chosen non-art topic. While the implication and recommendation and expectation was that students would choose a topic and continue that topic throughout the project, Student One and two others after completing the pre-instruction survey changed topics before beginning their first artwork. Student One’s original topic was Chemistry which she discusses in her pre-instruction survey. Despite the change from Chemistry to Biology within flowers, I think a comparison can still be made in Student One’s responses. Student One rated their level of motivation in Chemistry a three out of a

possible ten, however based on their explanation, my directions may not have been clear as they cite a difficulty in developing chemistry related subject matter as the reason for their low level of motivation, rather than the subject itself. In contrast Student One measured her proficiency as an eight of a possible ten noting that it is her intended major after graduating high school. “I have taken Chemistry 1 & 2 and I love it- it is what I plan to major in in college. I understand it really well.”

In quantitative data Student One shows little improvement, from a five to a six, in motivation for their art course, offering “I’m exhausted from creating art at the moment because my creativity level isn’t where it should be but I also know that if needed I could make art now” as an explanation. Student One also showed a one point improvement as it relates to her skill level moving from a three out of five to a four out of five saying “I feel like my art proficiency has increased as I have taken more art classes and learned new techniques but I also believe that my art could be better and there's always new things that I could learn.” As in her pre-instruction survey, there may have been some miscommunication about the goal of rating the motivation level on her chosen non-art subject as Student One rated her motivation to continue creating art about this topic. However, there was a clear increase as Student One rated her motivation a six out of ten, an improvement of the three out of ten rated in the pre-instruction questionnaire. The miscommunication is evident when viewing her explanation: “I am not driven to make art that has to do with my concentration anymore.” The explanation implies that the student is rating her motivation level on making art about the topic rather than the topic itself.

In addition to quantitative data and its explanation, students were asked discussion questions about each of the integration strategies listed in Julia Marshall's *Five Ways to Integrate: Using Strategies from Contemporary Art*. The following exchange are the questions and Student One's responses to those:

Describe your depiction artwork.

My depiction artwork is a chalk pastel drawing of a yellow liliaceae flower.

What kinds of research did you need to conduct to complete the depiction artwork?

I had to research types of flowers and their structures in order to complete this artwork.

Did this research/execution of the depiction artwork deepen your understanding of your chosen non-art topic, if so, how?

Yes, it helped me understand the structure of types of flowers and how they look.

Describe your extension/projection artwork.

For my extension/projection artwork I did a watercolor and ink drawing of a flower surviving off of wires.

What kinds of research did you need to conduct to complete the extension/projection artwork?

I had to research how plants might evolve in the future.

Did this research/execution of the extension/projection artwork deepen your understanding of your chosen non-art topic, if so, how?

Yes, it showed me how flowers will evolve in the future.

Describe your reformatting artwork.

My reformatting artwork is a drawing of a roses growing out of an outlet.

What kinds of research did you need to conduct to complete the reformatting artwork?

I needed to learn how to put two things together that don't belong.

Did this research/execution of the reformatting artwork deepen your understanding of your chosen non-art topic, if so, how?

Yes, it showed me what flowers natural settings are and how they can be misplaced.

Describe your mimicry artwork.

My mimicry artwork consists of a test tube and chemicals that promote growth of flowers. The flowers are growing all around the chemistry objects.

What kinds of research did you need to conduct to complete the mimicry artwork?

I had to research the chemistry behind flowers and what would help them grow.

Did this research/execution of the mimicry artwork deepen your understanding of your chosen non-art topic, if so, how?

Yes, it taught me a lot about the chemistry and genetic makeup of flowers.

Describe your metaphor artwork.

My metaphor artwork is a drawing of a rose with petals falling off.

What kinds of research did you need to conduct to complete the metaphor artwork?

I needed to do research on flowers and their symbols in order to do this artwork.

Did this research/execution of the metaphor artwork deepen your understanding of your chosen non-art topic, if so, how?

Yes, it taught me how flowers can be used as a metaphor for life and the journey of life.

Based on Student One's responses the research portion of this project was beneficial for the student in creating content for her work. However, based on the short and superficial responses as compared to other students (see forthcoming section about Student Two) and teacher observations the amount of research was shallow and limited. Despite this the student can give specific examples for how research benefited each of her artworks.

Through my observations Student One's frequent absences put her in a situation where she was struggling to keep up with the production of art, especially for the pace

needed to complete the AP portfolio in one semester. This time spent trying to keep up with the pace of the course left little time for the research expected in this project, which was not helped with the topic change, as this student was also enrolled in AP Chemistry which may have been a platform for completing that expected amount of research. Though this student changed her topic, the topic she settled on was a departure from her work in the past, which features mostly abstracted and graphic portraits and very little still-life or landscape content.

Each student's work was evaluated by using a rubric for grading art (Appendix F). The rubric consists of four criteria: use of elements and principles, experimentation, effort and perseverance, and craftsmanship. Each criterion is ranked on a score of one to four with one being poor performance in that criteria and four being strong performance in that criteria. The rubric will yield a total possible score of sixteen.

Figure 9: Student 1 depiction artwork, Chalk Pastel, 2019

Student One's artwork often incorporates realistic elements with some use of whimsical pattern and texture. Despite this, Student One ventured away from her frequented style choices for much of this project, an unexpected outcome, and in her first work the depiction assignment (Figure 9) used chalk pastel to draw a yellow Liliaceae flower. This was done with a relatively successful level of realism. For her background Student One used a pre-existing page of scientific botanical drawings. For this artwork Student One demonstrated a satisfactory use of elements and principles. The use of green within the flower unifies

the work with the background and the addition of red as the darker values within the petal create a sense of depth without dulling the use of color. The use of line, however, is rather static and lacks a lifelike feel. The work demonstrates an unsatisfactory use of experimentation as it pulls directly from an unoriginal resource images and relies heavily on the botanical drawings of the background. As with experimentation Student One's depiction work demonstrates a lack of effort and perseverance as the student sketched an planned additional use of the space including a variety of flowers as subject, with a diverse range of mark making used to combine the different subject matter, but instead stopped before even partially executing her plan. Where Student One's depiction artwork shows the most proficiency is craftsmanship and skill. Student One creates a sense of depth and interest in the drawing by using strong technical prowess in blending of the chalk pastel as well as incorporating a high level of detail in the subject matter. The project does have some minor flaws present, an example of which would be the line weight of the stamen of the flower. The cumulative score for Student One's depiction artwork is an eight out of sixteen.

The final artwork in this project was the metaphor artwork, which required students to create a visual metaphor with their topic. This metaphor could be about the topic or could use elements from their topic to create the metaphor. Student One chose the latter. Student One's metaphor work (Figure 10) is a small ink drawing of a rose with three petals falling from the rose. Student One demonstrates a use of elements and principles

Figure 10: Student 1 metaphor, Ink, 2019

that needs improvement. There are some elements which the student demonstrates strongly, such as use of an interesting texture to create value, however, the overall composition is lacking visual interest and there is little attention to use of principles to progress the metaphor. There is an unsatisfactory level of experimentation as the student is utilizing another unoriginal image as a reference. The effort this student used in creating the work also needs improvement, as the work itself looks unfinished, due to the blank background. Finally, the level of craftsmanship is satisfactory as the subject is represented with a fair amount of detail and the student uses the ink pen to create a full range of values. The cumulative score for Student One's metaphor artwork is an eight out of sixteen. In her work, not only between the first and last artwork of the project, which are discussed here, but also in her entire portfolio, Student One's artistic proficiency does not demonstrate growth.

Student Two

This student, a senior male, has taken one previous art class, Beginning Drawing, in which he made an A. This student has demonstrated a very high level of proficiency in representational drawing and has a moderate to high level of proficiency in design and conceptual choices. From Student Two's pre-instruction survey we can see a nine out of a possible ten level of motivation at the beginning of his current semester in art. The student attributes this to excitement about learning and growing as an artist. "I am eager to expand my current skill set and learn new techniques. I look forward to creating artwork that really interests me and allows me to deliver a message." In addition to his level of motivation Student Two rated his proficiency at a high four out of a possible five with the explanation that they have not yet experienced a diverse

range of media. “My strong point is definitely sketching with pencil only, followed by colored pencils. I can paint well, but it is the thing that drops me a point because I could improve at it.” Through this semester, it was important to try to influence students to try new and different media, even though they maintained the choice of which media to use. This was made more difficult with this student because his Proficient Art course was integrated with a larger Intermediate Course.

Student Two’s chosen non-art topic was aerospace engineering, which while not specifically offered at my school relates closely to two courses in which he is enrolled, AP Physics and AP Calculus BC. Student Two rated his level of motivation in aerospace engineering a ten out of a possible ten explaining the high rating thusly: “Spacecraft design and engineering is one of my biggest passions right now. It has always intrigued me, and I plan on going to college for aerospace engineering in the fall. Very motivated.” In addition, he rated his proficiency an eight out of a possible ten citing their high level of excellence in math and physics, though not having the specified knowledge needed to be an expert in the aerospace field specifically. “I am excellent at physics and math, which is key to engineering, but I haven't engaged in college level engineering so I can't say I'm an expert at it.”

In quantitative data Student Two shows a decrease, from a nine to an eight, motivation rating in their art course, however, based on his explanation Student Two remains highly motivated in his art course. “I am eager to continue to explore different styles and mediums. I want to branch out and further my skills in areas like painting and build on my skills of drawing and pushing value in general. I have plenty of topics and themes that I want to incorporate into my art, and I look forward to implementing those

topics. I am excited to work on my own this summer and during college to really express myself and push my boundaries." As with his motivation Student Two's perceived performance was rated one point lower, from a four out of five to a three out of five, than their pre-instruction survey. Student Two's lack of use in diverse media is once again a noted reason for the score, "I think my best medium is graphite. I feel like I could definitely practice more with it which is what I want to do this summer. I can create different values pretty well using colored pencils, but I want to improve my value skills in painting. This includes both acrylic and watercolor. This is why I rated myself in the middle of the scale; I am good at a couple of media, but I am weak in others." In his discussion of his work Student Two discusses the range of media he used prior to this course. This student had only experienced the use of colored pencil, graphite, and some introduction to painting, but within this course the student was encouraged to experiment. The realization that Student Two did not take to these as quickly and effectively as drawing media explains the drop in proficiency rating. Below is listed Student Two's responses to the questions specific about his artwork and the research integrated into the work:

Describe your depiction artwork.

My depiction artwork was a lander from a science fiction movie. It depicted the ship landing on an extraterrestrial ice planet with mountains rising in the background. The medium I used was graphite.

What kinds of research did you need to conduct to complete the depiction artwork?

I had to research the design of the spacecraft in order to make my drawing an accurate depiction of it. I also looked at how different strengths of gravity could affect natural land features like mountains.

Did this research/execution of the depiction artwork deepen your understanding of your chosen non-art topic, if so, how?

Yes. The design of a spacecraft is key in determining where things like thrusters are placed on the craft. Lesser gravity also allows for more dramatic land features because there is less force pulling down particulate like rocks and dirt, and they can remain stable at steeper angles without falling.

Describe your extension/projection artwork.

This artwork depicted seven ships leaving a dying Earth and heading towards a new solar system. The earth is a deep purple color and damaged, while the new solar system is pristine and complete. The medium I used was acrylic paint.

What kinds of research did you need to conduct to complete the extension/projection artwork?

I had to research relatively close solar systems that could possibly sustain life. The idea was that if humans advanced enough to travel to other solar systems, then they could seek refuge when the Earth inevitably dies.

Did this research/execution of the extension/projection artwork deepen your understanding of your chosen non-art topic, if so, how?

Yes. Because of the immense distance of space between the nearest stars and solar systems, light speed travel is required if humans are to reach a new planet in a lifetime. I also discovered that the solar system I chose as my topic contained seven possible life-sustaining planets, thus the use of seven ships.

Describe your reformatting artwork.

This piece consisted of a mugshot of the Apollo 1 capsule. The head was the capsule and the body was a person holding a sign with the words "mass murder" written on it and a date. This refers to the three astronauts that were burned inside the capsule during a test launch.

What kinds of research did you need to conduct to complete the reformatting artwork?

I had to research when the accident happened, who was killed, where it happened, and why it went wrong. Just the basic information on the event.

Did this research/execution of the reformatting artwork deepen your understanding of your chosen non-art topic, if so, how?

Yes. I learned that the cause of the problem was a design flaw in the capsule itself. The hatch failed to open properly from the inside of the craft, so when a spark started a fire during a test launch the astronauts had no way to get out. This was the "murder" aspect. It shows the darker side of the space race because sometimes it seems that being fast came before being safe.

Describe your mimicry artwork.

My mimicry artwork was a model rocket. I built a scale model including the correct paint job to make it look as realistic as possible. I placed paper and wood underneath the rocket when I launched it, and the exhaust created an interesting pattern on the paper and wood. I launched it several times on different materials and combined the results into one piece.

What kinds of research did you need to conduct to complete the mimicry artwork?

I had to choose the rocket that I wanted to build, which included making sure that it was compatible with the engines and launch pad that I already had. After the kit arrived, I had to follow careful instructions to make sure that it worked properly and looked realistic.

Did this research/execution of the mimicry artwork deepen your understanding of your chosen non-art topic, if so, how?

Yes. It showed me how precise one must be in building something that has to fly in the air with some consistency. The fins have to be perpendicular to the contact surface, and as close to 90 degrees away from each other as possible. I learned about the leading edge of stabilizing fins, and how those must be created with a bevel to slice through the air.

Describe your metaphor artwork.

My metaphor artwork depicted a peregrine falcon with its wings spread. The feathers of the bird were different labeled rockets that have been used throughout history. The

chest of the bird was comprised of the flags from each country that contributed to building the rockets. A crown hovered above the head of the falcon. The mediums I used were pen, pencil, and colored pencils.

What kinds of research did you need to conduct to complete the metaphor artwork?

I had to research the general anatomy of a peregrine falcon to get the placement of "feathers" right and make them proportional to the rest of the bird. I also had to look up the design of each rocket and what country built it in order to know what flags I had to use.

Did this research/execution of the metaphor artwork deepen your understanding of your chosen non-art topic, if so, how?

Yes. It showed me the scale of the rockets that have been used throughout history, as well as how rockets have changed over decades of advancement. Even though we have come so far, we still can't compete with the complexity of a flying animal like a falcon, hence the crown above the falcon indicating its superiority.

Student Two’s responses to this section of questions provides more substance and specific examples of the types of research and how that research impacted the artwork. The specificity of Student Two’s responses showcase an ideal example of the execution of this project. Though the quantitative data gathered does not demonstrate positive progress in motivating and progressing proficiency, it is clear the content most of all and even the experimentation in Student Two’s work were benefitted.

My observations of Student Two have shown me the high caliber of this student. Student Two not only showcases a high skill level, especially in drawing, Student Two has a desire to learn and grow as an artist, especially as it relates to experimenting with new media, and is extremely receptive to feedback.

As with Student One, Student Two's work was evaluated based on the rubric in Appendix F. Student Two's first artwork (Figure 11) depicts a landing module, sourced from the film *Interstellar*, landing on an extraterrestrial planet of the student's own design. Student Two chose to use graphite to execute this work, as he felt he was best capable of creating a full range of value and differences in texture necessary to execute the design. This type of mechanical graphite drawing is indicative of the type of work this student created before attending my class. This work was graded as a needs improvement for use of elements and principles, the focus of the work is on the execution of the landing which the student captures well with his use of line and value; however, there are some issues with the application of value, especially long the mountain ranges in the background. In addition, there are some inconsistencies in the location of a light source, especially between the ship itself and the landscape. The experimentation demonstrated is of satisfactory quality. Though the type of imagery in the artwork is common, in this student's work there are some original elements which show some experimentation and

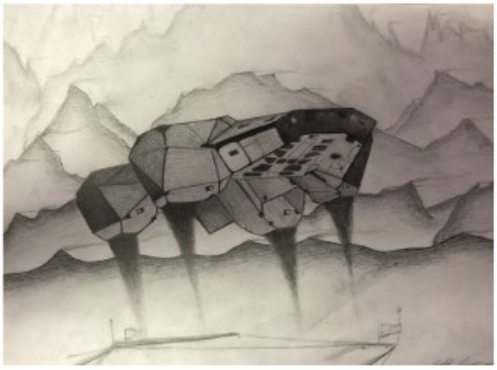


Figure 11: Student 2, Graphite, 2019

creativity by the student "...the extreme peaks indicate a lower gravity than Earth and thus a different planet." Within this quote the student illustrates not only his knowledge related to the topic, but also the level of thought in creating the background. The cumulative score for Student Two's depiction artwork is a 12 out of 16.

Student Two's metaphor work (Figure 12) is a falcon whose body is made up of the flags of countries which have space programs and the feathers are the vessels which those companies have used to travel into space. The falcon being a metaphor for flight and its body parts furthering that metaphor. This work demonstrates a satisfactory use of elements and principles, utilizing strong use of value, line as a tool for creating emphasis, use of repetition, and use of color. This work demonstrates an outstanding level of experimentation, Student Two is pushing his use of new media having only worked in graphite before, as well as developing a maximum amount of originality in content. Student Two's metaphor work also demonstrates an outstanding level of effort and perseverance based on the attention to detail and amount of research and thought put into the concept. Finally, the work demonstrates a satisfactory level of craftsmanship with the main flaw being the lack of background, this may have been more successful with a light neutral color in the background rather than plain paper. The cumulative score for Student Two's Metaphor work is a 14 out of 16.

Figure 12: Student 2, Colored Pencil, 2019

Despite Student Two not rating his own proficiency in art as improving, I as the teacher observed this student experimenting with new media and progressing his technical skills as well. In addition to the addition of colored pencil to his arsenal Student Two worked with sculpture, mixed media, and even performance. The effort in understanding the topic and his willingness to utilize feedback allowed this student to grow as an artist. The increased cumulative score from Student Two's first work in this series to his last work in this series is indicative of that.

Student Three

This student, a senior male has taken three previous art courses, Beginning Art, Proficient Art, and AP Art, in all of which he made an A, and is currently enrolled in AP Art. This student has demonstrated proficiency in design choices and an even higher level of proficiency in conceptual content. Student Three demonstrates a developing level of proficiency in technical skill, especially as it pertains to media beyond traditional pencil and colored pencil media. In the quantitative data from Student Three's pre-instruction survey and post-instruction survey. Student Three shows no growth, but instead maintains a high eight of possible ten from the pre-instruction to post-instruction survey. Maintaining this high level of motivation while completing a grueling AP portfolio while also fulfilling the requirements for this project lends credence to the idea that this project and the integration of a non-art topic in which the students are interested can increase student motivation in art. Student Three also rated his motivation in his selected non-art subject very high, but showed a one point drop from a ten out of ten down to a nine out of ten. Based on Student Three's response, he does not provide a specific reason for the drop. "I researched my topic heavily, reading articles on race and

racism; everything from Nelson Mandela to Malcolm X to Kendrick Lamar. While there is still a plethora of information left to uncover, I'd say I've got the basics at the very least." When discussing proficiency Student Three rated no growth in proficiency in either his art or non-art subject.

Student Three's chosen topic was African American culture, which this student felt would correspond with his social studies course. As a white and black biracial student, not only is this concept related to his social education, but also his personal life. Much of the work created by Student Three related to historical elements of African American culture, and also black-white race relations, a conflict with overt connections to the student. Through the course of this semester Student Three ranked no improvement in proficiency, a three out of five, in his art course giving a similar explanation in both the pre-instruction survey and post-instruction survey, noting a difficulty translating ideas to artwork as a reasoning for his ranking. "While in the past I've had a lot of ideas and motivation, I sometimes have trouble displaying those ideas in a fashion that I like." Student Three's self-evaluation in proficiency in African American culture also remained the same, a high nine of ten in both the pre-instruction survey and post-instruction survey. Student Three's discussion of his artwork focuses mostly on sources of inspiration as examples of research. Much of this, like Student One, is superficial examples of research where the student found trite images related to the topic rather than in-depth research on the topic. In some artworks the student discusses areas where my input in his work required more research that led to a deeper understanding of the topic. One specific example is his extension/projection artwork, where I encouraged the student to utilize traditional patterns from African culture, which

the student says, “I saw several African patterns in my search for a background, which helped me learn a bit about continental African culture.” Student Three’s responses to discussion questions specifically about his artwork can be seen here:

Describe your depiction artwork.

A portrait of Malcolm X with a fence behind him, drawn in a Boondocks-esque style.

What kinds of research did you need to conduct to complete the depiction artwork?

Malcolm X's ideology and beliefs, as well as his key physical features.

Did this research/execution of the depiction artwork deepen your understanding of your chosen non-art topic, if so, how?

I was able to learn more about Black Nationalism and Malcolm X's separatist ideology, as well as some general information about the Civil-Rights Era.

Describe your extension/projection artwork.

A pyramid with words such as "overcome", "oppression", and "pride" on it, with a green, yellow, and red tribal background. The bottom is adorned with lyrics from Kendrick Lamar's "The Blacker the Berry".

What kinds of research did you need to conduct to complete the extension/projection artwork?

Not much, other than looking for a tribal-esque pattern for the background.

Did this research/execution of the extension/projection artwork deepen your understanding of your chosen non-art topic, if so, how?

I saw several African patterns in my search for a background, which helped me learn a bit about continental African culture.

Describe your reformatting artwork.

A pencil drawing of a black office worker being choked (i.e. lynched) with his tie by his old white boss. The background is black and white, with lyrics from Madvillain's "Strange Ways" scattered throughout.

What kinds of research did you need to conduct to complete the reformatting artwork?

None

Did this research/execution of the reformatting artwork deepen your understanding of your chosen non-art topic, if so, how?

I wouldn't say this one deepened my understanding, but more re-affirmed it; it's no secret that many big bosses are old white men that oftentimes may take advantage of their workers. Other than that, there's not much more to the artwork than it being a visual representation of "Strange Ways".

Describe your mimicry artwork.

A photographed light painting of myself being lynched by a white man.

What kinds of research did you need to conduct to complete the mimicry artwork?

I needed to think of a way that African Americans have experienced racism, and lynching seemed perfect. Knowledge of the slave-era helped me come to this conclusion.

Did this research/execution of the mimicry artwork deepen your understanding of your chosen non-art topic, if so, how?

I had a fleeting thought while taking the photograph that it was how slaves likely felt while being hung for no reason- in front of several people while a white man controls their fate.

Describe your metaphor artwork.

A mixed media painting of a black man thinking about how race relations aren't always all bad.

What kinds of research did you need to conduct to complete the metaphor artwork?

I had to think hard about what the man would be thinking about, and with the help of Mr. Quinn I came up with a more positive representation. It was difficult coming up with something that wasn't trite.

Did this research/execution of the metaphor artwork deepen your understanding of your chosen non-art topic, if so, how?

It helped me see that even though the world is crazy, it's a mix of good crazy and bad crazy.

Student Three's responses to this section demonstrate a superficial level of research into his topic. Though this is true, through my observations this student did progress his knowledge on the topic. One observation I made is his research into Malcolm X. While his artwork is simply a depiction of the civil rights leader, this project led to the student not only researching Malcolm X's image, but also his ideas and even listening to several speeches given by Malcolm X. Student Three also took the opportunity of the small six student class to share some of the content behind Malcolm X's ideas, including separatism and confrontationalism, but also to discuss the climate which brought about those ideas with his peers. Through my observations of this student and his progression through the course, I found that even though much of this student's work was moderate in skill level the amount of conceptual content and symbolism in his work demonstrated a furthered understanding of the research content, even if much of the research was superficial.

As with the previous students, Student Three's work was evaluated based on the rubric in Appendix F. Student Three's depiction (Figure 13) artwork is a caricature of the civil rights leader Malcolm X. The artwork is a watercolor painting with black marker used to define details and create contrast. The student shows a satisfactory use of elements and principles. Student Three uses scale to create a sense of depth and to emphasize and exaggerate the features of the subject. Student Three also incorporates color, contrast, and repetition. Student Three demonstrates a needs improvement level of experimentation, as the work does not make use of new media or experimental style choices and relies on somewhat unoriginal source imagery. The use of research on understanding Malcolm's ideals and teachings and the use of imagery to demonstrate, the fence as a symbol of separatist ideals, that pushes the student's level of effort and perseverance to an outstanding level. The student's level of craftsmanship on this work needs improvement. Student Three's application of watercolor is relatively patchy and lacks different values. The cumulative score for Student Three's depiction work is an 11 out of 16.

Figure 13: Student 3, Water color and marker, 2019

Student Three's final artwork (Figure 14), a photograph, is a metaphor and more specifically a goal for the future of race relations in the future. The photograph depicts two men locked in a handshake across the lines in the road. The symmetrical composition is a metaphor for two equals interacting together. The use of elements and

principles in the work needs improvement, the symmetrical composition while conceptually related to the work, lacks imagination and originality. Though not the most compelling or dynamic photograph, it was experimental for the student to even use a camera and photo editing software to create art. This student's style is much more aligned with the depiction artwork discussed above and this work. For this experimentation with a new media the work earns a satisfactory as the image itself is cliché. Despite the student's willingness to experiment with a new media, the effort in learning the correct process for taking and editing photographs was somewhat lacking, this photograph demonstrates a level of effort that needs improvement. Finally, the craftsmanship of this work also falls into the needs improvement level. In addition to the cliché subject and arrangements the work does not create a strong focal point on the subject due to a lack of contrast with the background and poor location of leading lines. The cumulative score for this work is a nine out of 16.

Figure 14: Student 3,Photograph, 2019

Though this work does not demonstrate an improvement in proficiency, much of this has to do with a lack of consistency across a diverse range of media. As his teacher I did notice an improvement throughout this semester, though that may not have been explicitly related to this series and project.

Chapter 5: Discussion

Contemporary pedagogy is driven more by high stakes standardized tests than ever before. This coupled with the demand for creative professionals in all sectors of the job market, has increased the expectation for art teachers to incorporate standards from multiple disciplines, including, mathematics, language arts, and science, into their daily curricula. This research has discovered and discussed some of the many benefits of cross-curricular integration. The increase of demand and popularity of cross-curricular pedagogy, including STEM and STEAM, led to this research's focus in historical examples of cross-curricular integration. The idea of cross-curricular integration is not a new concept. This paper has demonstrated the use of cross-curricular integration from the Renaissance through today's contemporary use of multidisciplinary, interdisciplinary, and transdisciplinary instruction strategies.

Future Research

In continuing to evaluate these five specific strategies of integration, future research could utilize a larger, broader, sample size in gathering quantitative data. Ideally data would be collected across multiple levels of art proficiency, diverse demographics, diverse school settings, and a larger range of ages.

Additionally, future research on this topic may take an in-depth look at comparing traditional examples of cross-curricular integration to contemporary examples. For example, understanding the efficacy of French Academies' methods of inclusion of geometry and anatomy compared to contemporary interdisciplinary methods.

Conclusion

In addition to the brief overview and discussion of the benefits and drawbacks to a cross-curricular approach to instruction, this research has defined strategies for cross-curricular integration used today. Multidisciplinary, interdisciplinary, and transdisciplinary instruction all represent different levels of artist integration. While this specificity of research is not readily available for historical examples of cross-curricular instruction, understanding these terms may be valuable when analyzing specific examples. Understanding that a transdisciplinary style approach may have been taken during the Renaissance when discussing geometry or anatomy may be beneficial in understanding how and where in the curriculum, we as contemporary educators may be able to best include those topics in our own curricula.

The purpose of this pilot research was to understand how integration of non-art concepts into the art classroom can benefit the students' performance and motivation within those environments, while maintaining an authentic art environment which nurtures creativity and fosters and expressive environment for art students. The data presented in this research does not leave us with a full picture to completely understand the effectiveness of these five strategies suggested by Julia Marshall. The data gathered among this small, unique sample size, does not necessarily support that this is the most beneficial way to integrate cross-curricular concepts into the art environment. The fact that the students' perceived proficiency in their chosen non-art content area decreased during the semester may be viewed positively in the following way. As students were required to reform their knowledge of their non-art content in the context of art, they became aware of their existing lack of knowledge in the non-art content

area. This self-awareness may have a beneficial effect on their future studies in the non-art content area.

The number of variables among this group were, maybe, too much to overcome. These variables include the stresses of completing and submitting an AP Art portfolio within one semester, participating in a student driven course within an art course of a differing level, concentrating on one specific non-art topic throughout a full portfolio, small sample size, and so forth. Through the case studies from each of these three students, there were widely different approaches to this project from its inception, choosing a topic, to the interpretation of the strategies, and the execution of the artworks.

The current educational expectation for integration in many courses, especially those deemed elective, requires that this type of research continue. The limited amount of useful data produced in this project does not deter my theory that incorporating strategies used by contemporary artists is a relevant source for cross-curricular instruction, and potentially a tool for integration consistently rather than as a novelty. As research on this topic continues there are a range of routes for development, continuing to look back to contemporary art for new strategies and inspiration, further defining and honing these strategies for the classroom, and eliminating the types of variables in this project which prevent collection of useful data. The potential benefits of incorporating Marshall's contemporary artists' strategies in art classes may increase the students' creative thinking in art approaches to artistic expressions and, interestingly, increase the students' desire to expand their knowledge in the non-art content area.

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APPENDIX A: IRB Approval

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board
4N-64 Brody Medical Sciences Building· Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office **252-744-2914** · Fax **252-744-2284** ·
www.ecu.edu/ORIC/irb

Notification of Initial Approval: Expedited

From: Social/Behavioral IRB
To: Casey Quinn
CC: Cynthia Bickley-Green
Date: 1/15/2019
Re: UMCIRB 18-002372
Interdisciplinary Topics in Art Education

I am pleased to inform you that your Expedited Application was approved. Approval of the study and any consent form(s) is for the period of 1/14/2019 to 1/13/2020. The research study is eligible for review under expedited category #6, 7. The Chairperson (or designee) deemed this study no more than minimal risk.

Changes to this approved research may not be initiated without UMCIRB review except when necessary to eliminate an apparent immediate hazard to the participant. All unanticipated problems involving risks to participants and others must be promptly reported to the UMCIRB. The investigator must submit a continuing review/closure application to the UMCIRB prior to the date of study expiration. The Investigator must adhere to all reporting requirements for this study.

Approved consent documents with the IRB approval date stamped on the document should be used to consent participants (consent documents with the IRB approval date stamp are found under the Documents tab in the study workspace).

The approval includes the following items:

Name	Description
General artwork Rubric	Standardized/Non-Standardized Instruments/Measures
Minor Assent Form	Consent Forms
Non-art Subject Teacher Inquiry	Surveys and Questionnaires
Parent Permission Form	Consent Forms
Post-instruction Self Evaluation	Surveys and Questionnaires
Pre-instruction Self Evaluation	Surveys and Questionnaires
Research Proposal	Study Protocol or Grant Application

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

IRB00000705 East Carolina U IRB #1 (Biomedical) IORG0000418

APPENDIX B: Parent Permission Form

Parental *[Legal Guardian, Legally Authorized Representative]* Permission to Allow Your Child to Take Part in Research

Information to consider before allowing your child to take part in research that has no more than minimal risk.

Title of Research Study: Cross-curricular Integration in the Art Classroom

Principal Investigator: Casey Quinn

ECU School of Art and Design

Address: 800 Old Boiling Springs Road Shelby, N.C. 28152

Telephone #: (704)476-8331 ext.3478

Participant Full Name: _____Date of Birth: _____
Please PRINT clearly

Researchers at East Carolina University (ECU), study issues related to society, and the human condition. Education is a social science. Teachers are interested in finding out teaching methods and strategies helps their students to learn best. To do this, we need the help of volunteers who are willing to take part in research. I am a graduate student in the Art and Design College at ECU. Currently I am enrolled in the Art Education Master's online program.

Why is my child being invited to take part in this research?

Students have difficulty making connections of topics discussed in different subjects. The solution for this problem has created a several strategies in pedagogy including, multidisciplinary, transdisciplinary, and interdisciplinary curricula. This integration of multiple disciplines has created a perception among many art teachers, me included, that as these other subjects become more and more pushed in our curriculum that students will be sacrificing an authentic arts education. The proposed research uses teaching strategies suggested by researcher Julia Marshall which may improve student motivation and performance in both art and other integrated subjects.

If you and your child agree for him/her to volunteer for this research, your child will be one of about 19 students to do so.

Are there reasons my child should not take part in this research?

This study is Action Research, which means that the methods used are not outside of what is taught at other schools or educational institutions. I cannot see any reason for your child not to take part in the research as this method of instruction has been identified as a best practice by the National Art Education Association. The integration topic will be choice based and utilized as a tool for completing five projects inspired by techniques used by contemporary artists. Students will have a large amount of choice in this research.

What other choices do I have if my child does not take part in this research?

Because students will continue to be taught the same NC Essential Standards your student will complete the same tasks as those participating in research, however I will not store their data beyond the classes learning management platform and grade recording.

Where is the research going to take place and how long will it last?

The research will take place in the Art Classroom at Crest High School and last the duration of the AP portfolio period. January-May

What will my child be asked to do?

Your child will be asked to do the following, nothing below is not outside of the regular educational school day:

Students' current portfolio will be evaluated based on the general art rubric.

Students will complete an entry questionnaire about their motivation level and performance in art and other school subjects.

Students will utilize five strategies for integrating non-art topics into their art effectively using art as a research tool.

Students' artwork will be re-evaluated to determine growth.

Students will complete an exit questionnaire about their motivation level and performance in art and other school subjects.

Photographs of students and their work will be published. Students' numerical grades will not be distributed with identifiers, such as student name.

What might I experience if I take part in the research?

We don't know of any risks (the chance of harm) associated with this research. Any risks that may occur with this research are no more than what you would experience in everyday life. We don't know if your child will benefit from taking part in this study. There may not be any personal benefit to your child but the information gained by doing this research may help others in the future. Students may perform better in non-art subjects because of their interest in art, or vice versa.

Will my child be paid for taking part in this research?

We *will not be able to* pay you or your child for the time you volunteer while being in this study. It will not cost you any money to be part of the research.

Who will know that I took part in this research and learn personal information about me?

ECU and the people and organizations listed below may know that your child took part in this research and may see information about your child that is normally kept private. With your permission, these people may use your child's private information to do this research:

The University & Medical Center Institutional Review Board (UMCIRB) and its staff have responsibility for overseeing your child's welfare during this research and may need to see research records that identify your child.

Casey Quinn (your child's art teacher)

.

How will you keep the information you collect about my child secure?

The information that is collected in the survey will be stored on a password protected laptop and in the event publication of numerical grades is necessary student identifiers, such as name, birth date, school ID number, will not be attached to those published grades.

What if my child decides he/she doesn't want to continue in this research?

Your child can stop at any time after it has already started. There will be no consequences if he/she stops and he/she will not be criticized. Your child will not lose any benefits that he/she would normally receive.

Who should I contact if I have questions?

The people conducting this study will be able to answer any questions concerning this research, now or in the future. You may contact the Principal Investigator at Casey Quinn, (704)476-8331 ext.3 478 or by email: cequinn@clevelandcountyschools.org

If you have questions about your child's rights as someone taking part in research, you may call the Office of Research Integrity & Compliance (ORIC) at phone number 252-744-2914 (days, 8:00 am-5:00 pm). If you would like to report a complaint or concern about this research study, you may call the Director of the ORIC, at 252-744-1971

I have decided my child can take part in this research. What should I do now?

The person obtaining informed consent will ask you to read the following and if you agree, you should sign this form:

I have read (or had read to me) all of the above information.

I have had an opportunity to ask questions about things in this research I did not understand and have received satisfactory answers.

I know that my child can stop taking part in this study at any time.

By signing this informed consent form, my child is not giving up any of his/her rights.

I have been given a copy of this consent document, and it is mine to keep.

Please fill in the circle below to what you consent or do not consent for photo releases:

I give permission for my child's photograph to be used in a publication.

I give permission to have my child's art published.

I do not give consent for any photographs of my child's art to be published in a scholarly magazine.

I do not give consent for a photograph of my child to be published in a scholarly magazine.

_____

Parent's Name (PRINT) **Signature** **Date**

Person Obtaining Informed Consent: I have conducted the initial informed consent process. I have orally reviewed the contents of the consent document with the person who has signed above, and answered all of the person's questions about the research.

_____

Person Obtaining Consent (PRINT) **Signature** **Date**

APPENDIX C: Minor Assent Form

Assent Form

Things You Should Know Before You Agree To Take Part in this Research

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IRB Study # 18-002372

Title of Study: Cross-curricular Integration in the Art Classroom

Person in charge of study: Casey Quinn
Where they work: Crest High School

Study contact phone number: (704)476-8331 ext.3478
Study contact E-mail Address: cequinn@clevelandcountyschools.org

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People at ECU study ways to make people's lives better. These studies are called research. This research is trying to find out the effectiveness of five strategies for integration of non-art subjects in the art classroom. Specifically, how use of the five strategies impacts your performance in art and a chosen non-art course.

Your parent(s) needs to give permission for you to be in this research. You do not have to be in this research if you don't want to, even if your parent(s) has already given permission.

You may stop being in the study at any time. If you decide to stop, no one will be angry or upset with you.

Why are you doing this research study?

The reason for doing this research is to increase my effectiveness as a teacher, while also improving your knowledge of the material in this art course, and also your chosen non-art topic.

Why am I being asked to be in this research study?

We are asking you to take part in this research because you are in an upper level art course and have taken or are taking English 3. Because there is a writing component the writing skills necessary should have been gained by this point.

How many people will take part in this study?

If you decide to be in this research, you will be one of about 19 people taking part in it.

What will happen during this study?

You will be asked to do the following, nothing below is not outside of the regular educational school day: Students' current portfolio will be evaluated based on the general art rubric.

Students will complete an entry questionnaire about their motivation level and performance in art and other school subjects.
Students will utilize five strategies for integrating non-art topics into their art effectively using art as a research tool.
Students' artwork will be re-evaluated to determine growth.
Students will complete an exit questionnaire about their motivation level and performance in art and other school subjects.
Photographs of students and their work will be published. Students' numerical grades will not be distributed with identifiers, such as student name.

Check the line that best matches your choice:
_____ OK to record me during the study
_____ Not OK to record me during the study

The research will take place in the Art Classroom at Crest High School and last the duration of the AP portfolio period. January-May

Who will be told the things we learn about you in this study?

- Information gained in this study including your responses to surveys and your artwork may be published for the public. At the very least this information will be available to Cynthia Bickley-Greene (the faculty investigator) Myself (the principal investigator) and the UMCIRB of ECU (The University & Medical Center Institutional Review Board (UMCIRB) and its staff have responsibility for overseeing your child's welfare during this research and may need to see research records that identify your child.)

What are the good things that might happen?

Sometimes good things happen to people who take part in research. These are called "benefits." The benefits to you of being in this study may be improved performance in both your art course, and your chosen non-art course. You may also experience higher motivation in both your art course, and your chosen non-art course.

What are the bad things that might happen?

Sometimes things we may not like happen to people in research studies. These things may even make them feel bad. These are called "risks." There are no known risks involved int his study. Things may also happen that the researchers do not know about right now. You should report any problems to your parents and to the researcher

Will you get any money or gifts for being in this research study?

You will not receive any money or gifts for being in this research study.

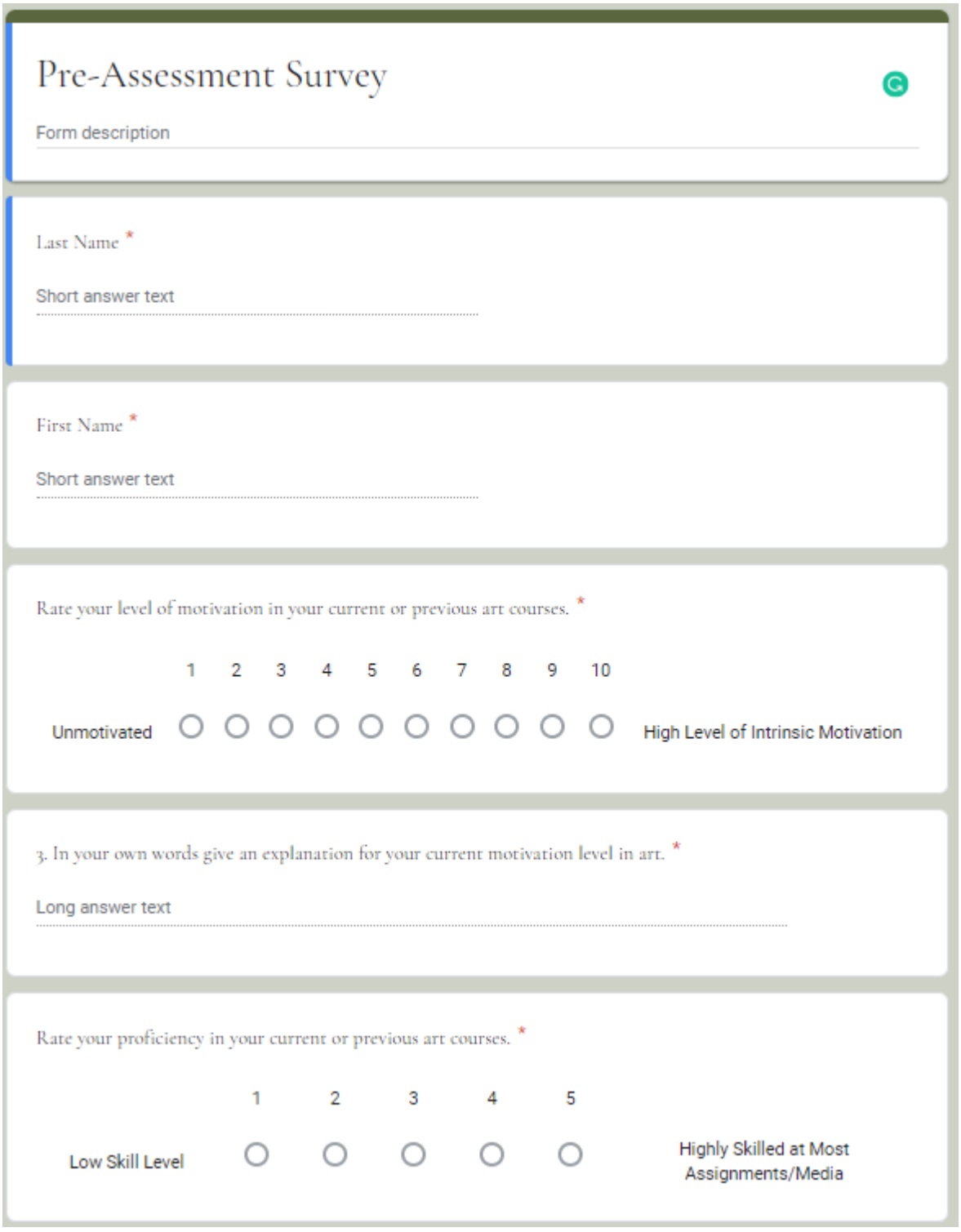
Who should you ask if you have any questions?

If you have questions about the research, you should ask the people listed on the first page of this form. If you have other questions about your rights while you are in this research study you may call the Institutional Review Board at 252-744-2914.

If you decide to take part in this research, you should sign your name below. It means that you agree to take part in this research study.

_____	_____
Sign your name here if you want to be in the study	Date
_____	
Print your name here if you want to be in the study	
_____	_____
Signature of Person Obtaining Assent	Date
_____	
Printed Name of Person Obtaining Assent	

APPENDIX D: Pre-instruction Survey



Pre-Assessment Survey

Form description

Last Name *

Short answer text

First Name *

Short answer text

Rate your level of motivation in your current or previous art courses. *

	1	2	3	4	5	6	7	8	9	10	
Unmotivated	○	○	○	○	○	○	○	○	○	○	High Level of Intrinsic Motivation

3. In your own words give an explanation for your current motivation level in art. *

Long answer text

Rate your proficiency in your current or previous art courses. *

	1	2	3	4	5	
Low Skill Level	○	○	○	○	○	Highly Skilled at Most Assignments/Media

In your own words give an explanation for your current proficiency level in art. *

Long answer text

Rate your level of motivation in your chosen non-art subject. *

	1	2	3	4	5	6	7	8	9	10	
Unmotivated	○	○	○	○	○	○	○	○	○	○	High Level of Intrinsic Motivation

In your own words give an explanation for your current motivation level in your chosen non-art subject. *

Long answer text

Rate your proficiency in your chosen non-art subject. *

	1	2	3	4	5	6	7	8	9	10	
Consistent Poor Performance on Classroom Measures of Proficiency	○	○	○	○	○	○	○	○	○	○	Consistent High Performance on Measures of Proficiency

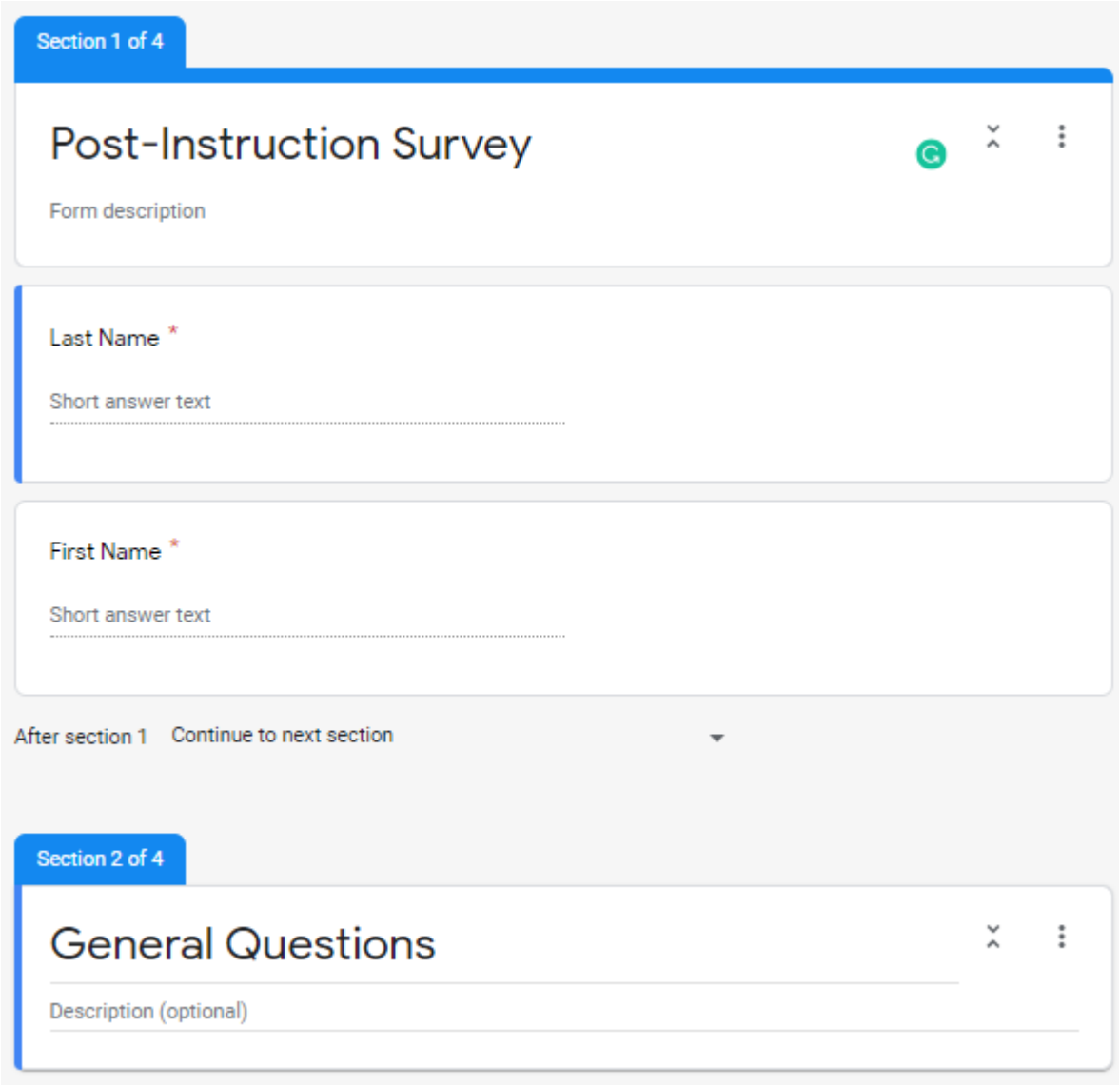
In your own words give an explanation for your current proficiency level in your chosen non-art subject. *

Long answer text

Do you have any other comments, questions, or concerns? *

Long answer text

APPENDIX E: Post-Instruction Survey



Rate your level of motivation in your current or previous art courses. *

	1	2	3	4	5	6	7	8	9	10	
Unmotivated	○	○	○	○	○	○	○	○	○	○	High Level of Intrinsic Motivation

3. In your own words give an explanation for your current motivation level in art. *

Long answer text

Rate your proficiency in your current or previous art courses. *

	1	2	3	4	5	
Low Skill Level	○	○	○	○	○	Highly Skilled at Most Assignments/Media

In your own words give an explanation for your current proficiency level in art. *

Long answer text

Rate your level of motivation in your chosen non-art subject. *

	1	2	3	4	5	6	7	8	9	10	
Unmotivated	○	○	○	○	○	○	○	○	○	○	High Level of Intrinsic Motivation

In your own words give an explanation for your current motivation level in your chosen non-art subject. *

Long answer text

Rate your proficiency in your chosen non-art subject. *

	1	2	3	4	5	6	7	8	9	10	
Consistent Poor Performance on Classroom Measures of Proficiency	○	○	○	○	○	○	○	○	○	○	Consistent High Performance on Measures of Proficiency

In your own words give an explanation for your current proficiency level in your chosen non-art subject. *

Long answer text

What was your chosen topic, and what led you to choose that topic?

Long answer text

Specific Questions About Your Artwork

Description (optional)

Describe your depiction artwork.

Long answer text

What kinds of research did you need to conduct to complete the depiction artwork?

Long answer text

Did this research/execution of the depiction artwork deepen your understanding of your chosen non-art topic, if so, how?

Long answer text

Describe your extension/projection artwork.

Long answer text

What kinds of research did you need to conduct to complete the extension/projection artwork?

Long answer text

Did this research/execution of the extension/projection artwork deepen your understanding of your chosen non-art topic, if so, how?

Long answer text

Describe your reformatting artwork.

Long answer text

What kinds of research did you need to conduct to complete the reformatting artwork?

Long answer text

Did this research/execution of the reformatting artwork deepen your understanding of your chosen non-art topic, if so, how?

Long answer text

Describe your mimicry artwork.

Long answer text

What kinds of research did you need to conduct to complete the mimicry artwork?

Long answer text

Did this research/execution of the mimicry artwork deepen your understanding of your chosen non-art topic, if so, how?

Long answer text

Describe your metaphor artwork.

Long answer text

What kinds of research did you need to conduct to complete the metaphor artwork?

Long answer text

Did this research/execution of the metaphor artwork deepen your understanding of your chosen non-art topic, if so, how?

Long answer text

After section 3 Continue to next section

Section 4 of 4

Follow-up Questions

Description (optional)

Did you find this format of curriculum organization was conducive to giving you as the artist freedom to make choices about your artwork?

- Yes
- No
- Maybe
- Other...

Was the common conceptual connection of all of your artworks an asset or a hinderance for your production of art this semester?

- ○ Asset
- ○ Hinderance
- ○ Had no impact

What suggestions would you provide for conducting this type of curriculum organization again? (limiting choices of non-art topics, assign specific art techniques to be used, diversify integrated non-art topics, etc.)

Long answer text

Do you have any other comments, questions, or concerns? *

Long answer text

APPENDIX F: Art Rubric

Name: _____ Mr. Quinn's Artwork Rubric Assignment:_____

Criteria	1	2	3	4
Elements and Principles	Project shows no use of required elements and principles, project unfinished.	Project shows minimal understanding of elements and principles, example color but in no particular scheme, values completely off, lines do not convey intended message. Image extremely small on page.	Project shows some understanding of elements and principles, example loose color scheme, values in wrong place, etc. Project created too small.	Project shows clear understanding of required elements and principles. Project uses full surface.
Experimentation	Project shows no effort towards experimentation, or project is copied from external source or peer.	Project shows minimal effort in experimentation. Ex. Repetitive subject matter, minimal use of range of media. (Ex. solid gray value as opposed to wide value range)	Project shows some creativity problem solved mostly logical. Cliché imagery and somewhat repetitive subject matter.	Project shows maximum amount of originality, thorough experimentation with use of media.
Effort and Perseverance	No project requirements met, no evidence of hard work.	Project requirements mostly met, minimal amount of hard work.	Requirements met with some hard work throughout project.	Project finished with maximum effort, went well beyond minimum requirements.
Craftsmanship/ Skill/ Effective use of tools	Project finished with no attention to detail quickly thrown together. Project discarded or stored carelessly. Poor use or attempted use of material.	Project finished, but very messy. Material used conservatively. Stored carelessly.	Project finished with most details, minor flaws present. Stored well and carefully. Some exploration of materials.	Thorough exploration of material. Project stored carefully. Very minor or no flaws present.

Total points:_____