"MAKING DO" OR MAKING PROGRESS?

A STUDY OF THE DESIGN AND ARRANGEMENT OF

EIGHTEEN K-12 MULTI-PURPOSE STUDIO ART CLASSROOMS

by

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ABSTRACT

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This study examined current conditions of existing multi-purpose studio art classrooms, or "dedicated spaces," in a cross section of America's schools. To date, most of the research completed to assess the state of arts education programs in the last 20 years has been through government-conducted statistical analysis, detailing the number of part- and full-time certified arts teachers and the number of dedicated spaces in which arts programs are housed in each reporting school. The NAEA's *Design Standards for School Art Facilities* served as the guideline for analyzing the physical design features and arrangement of the 18 classrooms included in the study. The work of Nel Noddings, Maxine Greene, and Parker Palmer provided framework for how the physical space influences human flourishing. The research utilized a multi-case study, and pursued two new methodologies: "*Goldsworthy as methodology,*" where Andy Goldsworthy's inquiry-based creative practice in natural settings is transposed into the observation and analysis of art classroom design features; *Design Thinking* was used to understand the dynamic nuances that tie both physical features and human experience together. The findings suggest that a large number of spatial problems exist in the classrooms included in the study, that the current state of these art rooms are not indicative of spaces that are designed to support visual art learning and human flourishing, and offer insight into how to better facilitate the construction or

rearrangement of studio art classrooms so that they are more intuitively suited to

creative activity than they currently are.

DEDICATION

This dissertation and all of the work that went into it is dedicated to my parents, Mickey and Faye Allmond, for valuing education and for making decisions when they were very young that would eventually lead me here. I cherish both of you and am so grateful for the sacrifices you've made for your children.

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To my "kiddos," my former students, thank you. Each one of you taught me as much as I ever hoped to teach you. It is YOU who inspired this work and all of the work that I do on behalf of children in schools today. No matter how old you get, you will still always be one of my "babies."

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A.S.A.

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INTRODUCTION AND RATIONALE

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I learned a valuable lesson a few years ago; one that continues to have multiple applications across a variety of areas in my life, but of which I am most reminded as I have researched my dissertation topic. I had inhabited my new office space for a little over six months and was immensely frustrated with its arrangement. It was a tight space with old furniture and equipment and had a variety of storage problems that seriously affected work efficiency and fluidity of movement around the small office space. There were two entry doors to work around (one of which was not in use), two desks that had to stay, a printer, a fax machine, a small refrigerator, and five large file cabinets that were not serving purposes worth the amount of space that they were consuming. I am naturally compelled to organize, so I began working on solutions as soon as I felt the freedom to do so in my new job. As I began ticking away at each problem area, I kept running into an obstacle that I could not work around, quite literally. It was a rather large 'built in' shelving unit that took up the majority of wall space on the largest wall in the office. I found myself pondering ways that I might eventually work *around* the behemoth that was standing in the way of progress.

One day a colleague of mine walked in during a brainstorming session I was having about the space and I instinctively asked him if he had any thoughts on how to deal with the problem that I was having in rethinking and reworking the space. His answer was so simple that it took me by surprise: He said, "Yeah. Just take down those shelves. And maybe cut their length and move them to the wall behind the door if you really need them for storage." At that moment, it instantly occurred to me that I had never even *considered* an option that included *moving* the shelves. In my limited understanding of our school's facilities operations at the time, along with my own lack of imagination in "considering things as if they could be otherwise," in this situation (Greene, 1995, p. 16), I had assumed that the shelves were permanently placed and immovable, simply because they were screwed into the wall.

The Pervasiveness of the Problem

Since then, I have become increasingly aware of the number of people, educators among them, who have difficulty in conceptualizing alternative solutions to ostensibly fixed situations. This problem, in my experience, seems never more evident than in the physical space of art classrooms. Over the years, I have spent a great number of hours in conversation with art teachers from a variety of geographic regions around the world. I have also spent a significant amount of time visiting art classrooms in the United States and England, photographing them, and discussing the use of the spaces with art teachers, administrators, non-art teachers, facilities personnel, and custodial and administrative staff as well. From these many conversations and site visits, along with my own experience as a teacher in art classrooms, I have grown increasingly aware of what seems to me to be a widespread problem: the overwhelming number of art classrooms that are unintentionally ill-equipped and poorly designed.

The amount of money invested seems to have little influence on the outcome. While that may seem counterintuitive, possibly even beyond comprehension, I have

visited a range of classrooms that cover a wide variety of school budget levels, public and private, including those funded through donor investment, and have found the problem to pervasively effect, in some form or another, most of the schools that I have visited. One school in England, a fairly elite private school, raised nearly one million British pounds to build a new kindergarten through eighth grade visual art studio classroom housed in a freestanding building. I was given an opportunity to see the blueprints for the new building, as well as the documents that the teacher and two visiting artists had submitted for the purpose of informing the school's administration, and eventually the architectural firm, of what the art professionals recommended and hoped for in the new space. As I reviewed these documents, I saw that the architect had designed a building that nearly exactly matched what was requested. The building's aesthetic would be a beautiful wood and glass structure, with some floor-to-ceiling windows, a kiln room, an office for the teacher, two medium sized storage rooms, sinks, an exhibition area and a relatively large classroom space. When it came to furnishings and fixtures, however, the art professionals had only submitted a few photographs and verbal descriptors indicating ideas for counters, small equipment and storage units that would line certain walls of the classroom area.

Unfortunately, these recommendations were minimal, so the architects left these areas undefined on the blueprints. As I studied the blueprints, I began to wonder: at what point would the details of the designed space take on its full potential? With a nearly two million-dollar budget (for one very beautiful building, mind you), would the new building offer the art teacher a better, more efficient space in which to work with her students? In one sense, how could it not? The space is big. It is designed to be aesthetically pleasing. It has two storage rooms, a kiln room, an exhibition space, and an office for the teacher. But in another sense, if none of the storage and studio areas have defined functions, or more specifically, offer well designed, potentially intuitive, fingertip access to materials, would the space, in the end, actually function as well as it might—particularly if early

attention to detail in the design stage would make a tangible difference in the fluidity of movement in the space, the aesthetic arrangement of materials and works in progress, the delight and creative joy embodied in the space, and ultimately, the ebb and flow of energetic art learning?

Conversely, throughout my career thus far, I have also visited a number of older art classrooms that introduce a sampling of problematic design features and arrangements: sinks that have not been replaced or modernized in well over fifty years; pedestal tri-faced science workstation sinks installed in the middle of the art classroom that have become impediments to flow and function; a wall of dysfunctional built-in lockers, whose doors are broken and bent, that were installed years ago inside the tiny classroom that has been repurposed and is now serving as the art room; classrooms too small for the thirty high school students who meet there each day; classrooms not originally intended as art classrooms and not sufficiently equipped to serve in that capacity now; vertical two-dimensional project storage cabinets that do not effectively fit the size of paper stored there, resulting in cabinet doors that must always be left ajar. These are only a few of the very real studio design problems that I have encountered in older classrooms.

In newer classrooms, too, problems seemed to exist: In one new school, ample industry-standard cabinets, open shelving and drawer space has been installed. But in a post-occupancy evaluation undertaken by the school district, the teachers reported that some of the distribution of these storage areas and furnishings around the classroom were problematic to the flow of activity; in another new school building project, upon realization of a change in district scheduling plans, what was originally designed as one large art classroom was apparently split down the middle during the construction phase and situated into two narrow classrooms, rendering each newly built space functionally awkward. I asked the school principal who was giving me a tour of the rooms how the art teachers felt about their new classroom space. Almost before I completed the question,

he declared, "They hate it. It doesn't work. There isn't enough room for all of the students to work at the tables, so they have to use the countertops for student overflow. Because of this, everything else is tricky about this narrow space" (personal conversation, June, 2014).

The Immediacy of the Bricks and Mortar Problem

In truth, "space can either enable—or inhibit—different styles of teaching as well as learning" (National Learning Infrastructure Initiative, 2004). While there may certainly be art classrooms that are well designed and, as a built environment, support and even invite a variety of teaching styles as well as optimal art learning for students, unfortunately, those spaces still seem to be in the minority today. My hope is that this situation could change in the near future. As I have undertaken this study, many school districts and regional governments are working under newly funded bond issuances that will allow for the construction of new school buildings. Four school districts in the regions that I included in this study are currently undertaking the replacement of old school buildings or are building new sites altogether. Based on my initial conversations with school administrators, these buildings will include dedicated studio art classrooms. These questions remain, however: what will inform the design of these new studios, and will that information strategically assist architects, designers, and contractors in creating spaces that intuitively work for art making and creative investigations of various media? If not, students and teachers who inhabit these spaces throughout the next 50 to 70 years may inadvertently pay a heavy price for a lack of informed insight which might have aided the planning and construction stages in developing intuitively functioning studio art classrooms.

Most school administrators that I encounter in my work seem to *want* to meet the needs of the arts programs under their supervision. Whether they fully understand how to do that or what provisions would best and more exactly solve certain long-existing

problems, is doubtful, given what comes up in conversations with these administrators. School leaders are driven by multiple directives and nuanced urgencies on any given day. Bela Arora (2013), chair of the Learning Spaces Pedagogic Research Group at the University of South Wales in Australia, argues that pedagogy, curriculum design, and technology-enhanced learning are of primary concern to decision makers, even when discussing learning environments. Because of these competing priorities, school leaders are less inclined to focus directly on the physical environment where learning occurs, even when, as my experience suggests, they are involved in renovation projects or are undertaking new school construction. Arora posits, however, that

> we need to do more to consider the impact of the bricks and mortar that surround us—and their importance should not be underestimated. A well-designed learning environment—one that considers all of the senses—can potentially increase levels of student creativity, productivity and wellbeing. There is extensive research to demonstrate this.

The Conversation We Could Be Having

There are a variety of reasons that the focus of educators' and academics' conversations, in particular, is not often on the physical, bricks and mortar learning environment, but students and teachers would ultimately benefit if this trend were to change. C. Kenneth Tanner (2000a), of the School Design and Planning Laboratory at the University of Georgia, suggests "communications barely exist between the research branches of education and architecture" (p. 311). Nancy Van Note Chism (2002), Associate Vice Chancellor for Academic Affairs and Associate Dean of the faculties at Indiana University-Purdue University, Indianapolis, gives a further explanation, albeit specific to colleges and universities:

> Low levels of awareness on how learning spaces influence learning outcomes, coupled with the complexities involved in building and maintaining learning spaces, have kept the topic of learning spaces from emerging for extensive public discussion. While a select few individuals on most campuses—the architect, the facilities maintenance director, the budget officer, and perhaps the registrar and technology director—have

been involved in learning space design issues, it has been less traditional for the users—the faculty and the students—to play any significant role in this arena. Although they occasionally grumble, particularly when classrooms are shabby, too hot, or too cold, users of academic spaces often take the limitations of the physical environment for granted and do not demand involvement. Planners usually assume that the expertise needed to design spaces is technical in nature and that the constraints of funding narrow the choices available to the extent that input from users would not be productive or efficient.

Since these observations were made over a decade ago, it is reasonable to suppose that the conversation between academics, school leaders, architects, and facilities planners has progressed, at least to some degree. In October 2015, I attended the Council of Educational Facility Planners International Conference in Portland, Oregon and became acquainted, for the first time, with the major contributors to this discussion. I was also given present-day insight into how the work of building schools and learning environments is developing. The research branches of education were not as strongly represented at the conference, but the architects, designers and school leaders that I engaged with seemed genuinely concerned, and even hopeful, for how the built environment of the schools that they were responsible for shaping would impact those who would eventually inhabit each room and hall and common area. Thoughtful questions like, "How do we create learning communities for the greatest thinkers, and most thoughtful people … for the world?", "What are the responses that we want to trigger in our schools?", "How does simplicity or innovation look from a distance of fifty years?", "Will the pendulum swing back the other way on things that we take for granted today?" or "How do you take a deep enough look at lessons from the past before making design decisions today?" were fodder for lively and stimulating deliberation.

As I spoke of my specific interest in art classroom design strategies and in examining the physical space problems inherent in and exclusive to studio art classroom spaces, the response of this community of professionals was nothing less than that of great interest and curiosity. Several asked a number of follow-up questions, others said

that they would like to read what I was writing about the subject, and another suggested that it would be a noteworthy session topic. Additionally, a classroom furnishings vendor told me that these ideas were not yet a part of the conversation at a conference of this kind, but that they would be soon, given an effort by academics, educators, and other contributors to generate new and relevant knowledge that could be employed by the practitioners represented at the conference who currently have the greatest influence in building or remodeling our nation's 21st century schools.

At that point, I began to wonder what would happen if art educators were to engage in a constructive conversation about the state of our classrooms. I realized that if we as a field of educators, a research branch of academia, and individuals who are passionate about art education, want to stop "making do" with dysfunctional spaces for our art students and their teachers, we must ask ourselves: Are *we* participating in an effective dialog with each other and with school administrators, architects, and facilities planners as intentionally and as hopefully as we could be? Are we pursuing questions in our classrooms whose answers will help us to advise school leaders about that which we need, in order to give students and teachers optimal learning environments in which curricular and pedagogical goals can be met more engagingly and efficiently—while at the same time desiring to create a space in our art studios in which our students might flourish? It seems to me that we are not.

Questioning Our Own Spaces

As natural as it might seem that art educators would have already undertaken the study of our studio art classrooms, a complex and vital contributor to the work that we do, there does not seem to be a significant amount of research examining how these spaces function for teachers and students or how the teachers who oversee them manage the dynamic melee and milieu that is an active art classroom. In 2004, the National Learning Infrastructure Initiative (2004) published a white paper in which it

notes that one important step in preparing for rethinking how spaces might be more effectively designed is to "consider studying how space is currently being used," and that "understanding existing space use may provide important insights into designing new or renovated space." First, then, as educators who seek art classrooms that are effectively designed and suitably equipped for optimal learning, we must evaluate how our studio art classrooms are being used, how they function for students and teachers, whether or not they are performing as intended, how the design and arrangement lends itself to learning and wellbeing, and whether or not it works to support the curricular goals of the teacher and allows for innovative practice.

One study examining art teachers and their relationship to their classrooms and the *stuff* housed there is from a recent dissertation from the University of Houston. Ann Marie Hubbard Waltz (2011) conducted a narrative inquiry study, choosing three local elementary art teachers as her participants. One impetus for pursuing this topic, for her, was that, through her particular interests and her teaching experience, and considering the large number of art teachers who manage dedicated studio art spaces, "it seemed timely to examine more closely what could be learned from their situated experiences" (p. 27). Based on her previous work in interior design, she asserts in the introduction to her dissertation that "we may need to consider redesigning and modifying the current elementary art teaching spaces" (pp. 27-28). Her dissertation, while examining art teachers' relationships with their classrooms and the *stuff* gathered there, along with the curricular endeavors of these teachers, discovers several instances where problematic design elements impede pedagogical practices.

In two of the three classrooms that she studied, a central "science room style" pedestal sink with three faucets had been installed during initial construction for what the school planned to use as one of two adjoining science laboratories. When the room was repurposed to house art classes, these sinks became little more than storage areas that now impede traffic flow and visual access to the front of the classroom. The two science-

labs-turned-art-classrooms in Waltz's (2011) study were also equipped with large science workstations, and in one of the classrooms was located three to four feet from the whiteboard at the front of the room. The workstation measured approximately four feet wide and eight feet long. Again, this feature was installed under the assumption that it would be a curricular aid to the science teacher as she conducted class, but after the space was repurposed and assigned as an art room, it became instead, an enormous, immovable impediment, both literally and figuratively, hindering the pedagogical goals of the teacher and the establishment of comfort and senses of community among her and her students.

As fixed features of the classroom—and ones that consumed large amounts of the square footage of what would have been the open areas of the classroom—these features divide up the room so that the teacher and her students have less overall space in which to work and gather, and causes traffic flow, contact, communication, and visibility problems, among other things. All three teachers that Dr. Waltz (2011) interviewed described the amount of space in their classrooms with words such as "crunched," "crammed," and "horrible." They stated that they had tried multiple ways of rearranging the space, with little impact on solving the problem.

In truth, there seem to be more problems than solutions in the art classrooms that I have spent time in recently, yet most art teachers that I meet cannot quite name either their problems or possible solutions with the clarity that would help to define what they specifically need or want. Instead, they have become masters of "making do," without investing much time in considering how they might re-imagine the space or inform those who are in positions that are able to facilitate the necessary changes what the true nature of the problems of our studio learning environments are.

The Unspoken Standard—"Making Do"

Art teachers have notoriously made an art out of "making do." It is part of the magic of what we do. It is so engrained in our culture, that we cannot seem to imagine doing our work any other way. But … *what if*…? What if we had a space that, itself, worked like magic? What if we could walk into our classrooms each day and have fingertip access to all of our materials? What if there was appropriate storage for our students' two-dimensional *and* three-dimensional projects? What if there was enough room for students to move in and out of their creative activities, but not so much that the spirit of community and connectedness were lost? What would "*They thought of everything!"* look like in studio art classrooms in K-12 schools in the U.S.?

What would our teaching look like then? What might change about how we engage with our students? Would we delight in coming to this animated space every day? Or, on the other hand, might we resist even the *idea* of a space that works *for* us, that has been precisely built to support our pedagogical goals, because we are so used to ones that do not? My experience with colleagues suggests that this last thought might be truer than we would like to admit. We seem to have become convinced that working under "minimally adequate conditions" (Snow, 2002) is a badge of honor that speaks to our courage and ingenuity. We seem unable to fathom having "optimal milieu arrangements" (Snow, 2002) available to us, and thus, rarely seek to imagine "things as if they could be otherwise" (Greene, 1995, p. 16). We might even resist the very idea that it could ever be much different than it seems to have always been.

Art teachers and educators in the field are certainly not the only ones who doubt the ability of most school systems to meet the needs of their students and the content area's curricular and pedagogical goals through building hospitable learning spaces; but neither am I the only one who suggests that things might be otherwise. Sue Ellen Snow (2002), who studied non-art teachers' relationships with their classrooms in six schools in Georgia, reasons,

Students can discuss mathematics while seated in a room under a gymnasium, but should they? Teachers can handle storage problems by walking back and forth to utility rooms down the hall, but is that the best use of their time and energy? Although teachers may function adequately in minimally adequate conditions, these conditions may need to be examined or changed to reduce time and energy demands.

Given the notion that the problem of providing optimal learning environments pervasively influences a great number of students and teachers in a wide range of content areas and school settings, the field of art educators—teachers, supervisors, and researchers—would benefit the art education experiences of their students and their studio classrooms by being more actively involved in both educating themselves to the physical facilities provisions currently available in many studio art classrooms and in vetting what works and what does not work in our content-specific places of learning. We need to be determined to develop intentional and proactive relationships with those who must know our needs in order to help us to achieve the curricular and pedagogical goals that our field strives to safeguard.

The Existing Professional Recommendations for Studio Art Classroom Design

The field of art education, through a committee of educators formed by the National Art Education Association, has generated a publication that names specific *Design Standards for School Art Facilities* (1994). These guidelines were revised and republished in Spring 2015. The standards include square footage recommendations based on student enrollment (55 square feet per student), separate square footage recommendations specific to storage areas and educator offices, guidance for the number of classrooms and teacher-to-student ratios (1-to-25 per classroom), and specific descriptions of suggested storage arrangements, to name a few of their areas for recommendation. These recently revised *Design Standards* also include a small bit of classroom technology guidance as well (NAEA, 2015). The recommendations were used as a baseline for comparison when examining the art classrooms chosen for this study.

As is often the case, nationally based standards of any kind in education are not always a welcomed informant to state and local policies and practices. The intention of this study is not to become engaged in a debate about the use of standards as hard and fast rules, nor about which governing body might oversee adherence to any type of standard that has been suggested. Instead, understanding national-level recommendations such as the NAEA's, will be helpful in eventually considering other guidelines that exist on state and local levels, or from other professional sources in the field—all of which might also inform design decisions in art classrooms. For example, the New York State Blueprints for Teaching and Learning in the Arts (2007) includes a short description of its preferences for how visual art studio classrooms should be organized and stocked (pp. 47-49). New York and other states' intentions for art classrooms might parallel or diverge from those of the National Art Education Association and could be helpful in mapping out a more cohesive strategy for the design and arrangement of studio art classrooms in the future.

A few questions that come to mind related to *any* notable guidelines for K-12 studio art classroom design that are informed by professionals from the field of art education, are: *Are* they being used by design and arrangement decision makers at all, and if so, *how* are they being used? And finally, are these guidelines' suggestions actually suitable solutions to design problems that typically exist in contemporary art classrooms? In other words, does the rhetoric match the reality?

The Reason It Matters—The Desire to See Our Students and Teachers Flourish

Understanding best practices in crafting studio art classrooms that function most beneficially and intuitively for their inhabitants is imperative to how students and teachers will ultimately experience a space. But why does it matter, in the end? If we have learned how to make do with what we have, why not just continue as is?

In my opinion, it matters because we are all human beings. We share a need to belong, a need to work in comfort whenever possible, a need to be challenged by new curiosities, a need to be delighted and to experience joy, a need to know and to be known. All who participate in the development and use of educational spaces would be wise to actively pursue a question that Jim Greenman (1988), author of *Caring Spaces, Learning Places: Children's Environments That Work* learned to ask himself early on in his teaching career, "How does it feel to live and work here all day, day after day?" (p. 23). I wonder, especially after visiting some of the classrooms that I have toured over the years, do we ever *really* ask ourselves that question? Do we ever sit in our students' seats and look around our art classrooms and wonder what they see? Do we desire to know what *they feel* about the space in which we receive them day after day? Do we ever question whether or not we have unintentionally created a space that is inhospitable to their presence? Do we wonder if they are inspired, or better yet, feel delight when they come into the classroom each day? Sometimes, I am sure, they do. Sometimes, I am also sure, they do not. Sometimes, we ourselves—the teachers who are tasked with leading our students into creative exploration—are also *not* inspired, delighted, or stirred by the spaces in which we work. And if we know that *we* are not, "if we understand how the environment influences *us* (emphasis added)," according to Greenman, "we will be in a better position to understand the impact of settings on children" (p. 16).

Furthermore, if we care about our students, which I believe that we do, then, as Noddings (2003b) asserts,

> we should not base our argument for better conditions on the grounds that the children will learn better in improved surroundings. They probably will learn better, but we should be prompted to provide better conditions by a collective uneasy conscience. Our happiness should be threatened by the misery of others, and children should not have to earn decent living and learning conditions, (p. 242).

Lastly, if we desire for our students to learn and achieve success in their academic and creative endeavors in the art room, then we should be quick to design spaces that invite them in, are hospitable to their needs, and compel them to learn and create. Paul Cornell, PhD (2002), states in the journal *New Directions in Teaching and Learning* that the environment often serves as a magnet, "drawing people in." He further states that, "when people feel comfortable, and valued, they will come, stay and return. Learning communities will result" (p. 37). It is in just such an environment that a classroom takes on a sense of intimacy of place that Yi-Fu Tuan speaks of in his book, *Space and Place* (2008); an intimacy of place that allows for optimal learning and human flourishing.

Flourishing—It's Not All Fairy Tales and Pixie Dust

When one speaks of caring for others and creating spaces in which both little and big humans are able to flourish, it is easy to lose sight of what I will call, for the moment, "the other truth." "The other truth," as I see it, is the other side of the coin, or the other objective. A good teacher knows that delight and hospitality, among other happy conditions, are essential elements that support the eventual success of her students. But she also understands that educational rigor, imaginative challenges and constructive conflict are the counterbalance that students need to experience as well, in order to grow and develop each day. Without the tug-of-war between these two objectives, learning rarely finds sure footing and is not often transformative.

Parker Palmer (2007), in his book *The Courage to Teach*, states, "Good teachers always find ways to induce … creative tension" (p. 76). He goes on to suggest, "This tension always feels difficult, sometimes destructive. But if I can collaborate with the work that it is trying to do rather than to resist it, the tension will not break my heart—it will make my heart larger" (p. 87). This implies that we have to not only recognize that our classrooms are not always intellectually, or even emotionally comfortable at times, but that we as educators actually need to embed this discomfort into our teaching

practice if we desire to create optimal learning opportunities for our students. In his work on the subject, Palmer identifies a non-exhaustive list of six paradoxical tensions that assist in designing charged and stimulating learning environments that ultimately support both learning *and* flourishing in our classrooms (pp. 76-90). The argument is that when the curricular and pedagogical goals of the teacher include a healthy, intentional engagement with the paradoxes between which tensions are experienced and thus learning occurs, students will experience delight, excitement, joy, and other good things as a result.

That said, this study is not aimed at understanding how art learning occurs within dedicated studio art classrooms. Instead, issues related to specific learning are folded into how these spaces are designed and experienced, particularly in the context of human flourishing, but it is not limited to that. It is understood that learning happens in studio art classrooms of all kinds, and given that, has points of connection to the context of the space in which it occurs. The decision to not directly address learning as a core component to this research has been made because art learning, in a variety of modes and settings, is a central topic in the field of art education research—and rightly so. A comprehensive study of the current conditions of dedicated studio art classrooms in the United States of America, and an understanding of the human experience as it relates to those spaces, however, seemed more urgent and compelling and has been of great interest to me personally for many years.

Problem Statement

K-12 art classrooms are unique spaces in schools, and are dedicated to serving students' art learning through curricula that includes a wide range of consumable materials, tools, small and large equipment, books, posters and more. To state it clearly, the art room is filled with the *stuff* of artmaking (Waltz, 2011, p. 45). Unfortunately, these

classrooms are also filled with furnishings and design details that are meant to facilitate the storage and use of the *stuff* of artmaking, but appear to do so inadequately. Yet, while art teachers in the U.S. have learned how to "make do" with inadequate and ill-equipped classrooms for years, few in the field have undertaken research into the very real day-to-day experiences of life in the art room or questioned how the design and arrangement of these educational spaces support the learning and making that occurs there. Professional standards exist that delineate recommendations for a variety of physical features that aid in art learning, but how well are they known and are they used by school designers and architects when new art classrooms are built? No research seems to exist that seeks to determine how the typical art classroom compares to the professional standards, nor is there research into how the physical condition of the art room impacts senses of well-being for the students and teachers that inhabit the space each day.

Research Questions

The following research questions and sub-questions establish and have guided the lines of inquiry for this study:

- Given the existence of the National Art Education Association's professional recommendations for the design of studio art classrooms in schools, along with scholarly and practice-based notions of human flourishing for children, how are both interpreted in selected public and private schools in three different geographic areas of the United States of America, and to what extent do they make the well-being and flourishing of individual art teachers and their students possible?

    1. How do dedicated studio art spaces in individual schools reflect the NAEA's professional recommendations for design and arrangement?

2. Where do disjunctions occur, if they do, between what is recommended, what is, and what is otherwise needed, in studio art classroom design?

3. In what ways do design and arrangement issues require teachers to "make do" with what they have or create alternate uses of a variety of items in order to meet their own apparent or perceived needs?

4. How do these individual studio settings, with their distinct design and arrangement issues, influence senses of well-being and human flourishing?

Assumptions

The following assumptions, those to be debated and those not to be debated, help to structure the study and bound it within appropriate limits. I have found that this topic, in particular, tends to raise objections largely due to previously held assumptions based on educational policies, teacher personality types, budget restrictions, and traditions that take the position of "that's the way it's always been done." Thus, because I have encountered versions of many of the assumptions listed here while engaged in conversation about the topic, I have attempted to recognize and address as many of the issues as seemed beneficial to the study, particularly in order to frame the study away from the assumptions that could easily derail it and toward the assumptions that will shape this research to produce sustainable and suitable data.

Assumptions not to be Debated

1. First and foremost, this study assumes that every human being is born intelligent, dignified and inspired and has a need and a right to flourish and thrive throughout life.

2. Second to the above, this study takes a very optimistic approach and assumes that we (society-at-large, educators, administrators, etcetera) care for our nation's children and their teachers, and thus, desire to see them flourish in their learning environments.

3. This study recognizes that educational policies on national, state and local levels have a trickle-down effect on the individual art teacher in her classroom.

4. The study also understands that site-specific school politics, practices and priorities exist as factors that also influence the teacher and her classroom.

5. Art curriculum taught in the study's participant art classrooms is generally fitting to national or state standards, uses a wide variety of artistic media choices—both traditional and new—and therefore, is conducive to art learning.

6. Both public and private schools of all K-12 levels work with similar pedagogical and curricular goals, and thus house art classrooms in which art learning takes place.

7. Many factors, including but not limited to treatment of the physical environment, impact how learning occurs and might be achieved.

8. Each classroom is unique. No classroom, even if similarly designed and equipped, are managed and operated in the exact same style as another classroom. No teacher works within the same space in exactly the same manner, with the same instincts, experience base, skill sets, goals, or pedagogical practices as another teacher might.

9. Art classes not housed within dedicated spaces, such as 'art-on-a-cart' situations, have their own set of complicated issues for the art teacher and students served through that format and, thus, were not included in this study.

Assumptions to be Debated

1. Given the important role of the art classroom as a physical space that, ideally, supports teachers' and students' wellbeing in reaching educative goals, a number of universal design problems, as well as site-specific design problems, exist in studio art classrooms. These design issues often inhibit teachers' curricular goals, optimal art learning, creative inquiry practices, and senses of well-being among teachers and students.

2. Given that it is often assumed that limited local and state budgets are *a*, if not *the*, primary reason for poor facilities conditions, the issues related to problematic art classroom design are not necessarily tied to the amount of money spent in the designing, construction and implementation of ideas/plans.

3. Given that the people most directly involved in classroom use, namely teachers, but also custodial staff and students, are not always consulted in evaluating ongoing design problems and operational needs, this practice has negative implications for the continuing use and maintenance of the space, as well as its influence on pedagogical goals and student and teacher flourishing.

4. Given the informal comments gathered to date, teachers themselves are not often equipped with the information or resources that they would need in order to assist designers and school leaders in providing art classrooms that offer long-term, timeless support of creative inquiry.

5. Given the existence of professional guidelines for the design of studio art classroom spaces, such as those revised and published by the National Art Education Association in 2015, these recommendations seem to have minimal impact on art classroom design, arrangement, and organization in many schools in the U.S. today.

6. Given that many school buildings are aging and in various states of disrepair, there is an urgent need to rebuild or remodel these facilities. An opportunity is at hand for the field of art education to consider their level of input into creating innovative solutions to design problems that have plagued school art rooms for many years, to create new guidelines that are consonant with the pedagogical and management needs of the art teachers who teach in them, and to the overall sense of wellbeing that both students and teachers experience in these spaces.

7. Given that learning can and does take place in classrooms that are considered only minimally adequate, an optimally aesthetic environment, use of the physical arrangement, and treatment of educational spaces (studio art classrooms, in the case of this study) impact senses of well-being, human flourishing, and art learning for the better.

Research Limits

Practical Limits

Similar to the assumption-based doubts about this research topic, I found that some of the teachers who were recommended by colleagues to participate in the study were hesitant and, in some cases, chose not to participate. Prior to the formal dissertation project, I worked with another teacher in an informal pilot study who inadvertently taught me about this as a potential limitation to the study. It is difficult for some art teachers to allow someone into their creative domain to observe and collect data about the use and arrangement of the space. I learned through practice how to ease the participant teachers' minds and to communicate to them often as I opened drawers, cabinets, and closets, and took close to 200 photographs of each classroom, that my visit with them was not for the purpose of judging them and their organizational

strategies and management capabilities. I have found that art teachers tend to be highly sensitive about their art rooms, which lends truth to the problematic nature of the space and the guilt that the teacher sometimes feels when their "secrets" are exposed; the messy spaces, the secret stashes of both cherished and "trashed" materials, the sometimes overwhelming collections of recyclables and found objects, and the myriad of tools, equipment, and consumables that simply do not have a place or a home in the space as it currently exists. The art teachers that I meet often feel that they are the ones who are supposed to figure out how to make the space work and that, if they cannot, most have expressed responsibility for their classroom not working as well as they know intuitively that it should.

Another practical limitation that I experienced while undertaking this research was an accessibility issue with schools in one of the three geographic regions included in the study. I chose the area because I had lived and worked there for over ten years before pursuing my graduate studies and knew its district divisions and socio-economic demographics well and have relationships with a number of educators there. What I did not anticipate was that each separate school district of the five in the region would require an extensive application process in order to be approved to undertake research in even one school. A family friend who is a school board member of one of the districts assumed that he would be able to call any number of school principals in his district, who would then allow me access to an art classroom and teacher in the school. Not only was that not possible, but every school or district that I called or reached out to via a colleague told me the same thing—that I would have to complete a lengthy research application first. Since I no longer lived in the area and was just beginning to gather my participant teachers, it proved too difficult a task to manage to apply to even the three that seemed most applicable to this study. What would have been a selection of schools from five diverse communities became a selection of three public schools within one district and a private school in another, and an expansion of the region to accommodate

the inclusion of two other schools in another city that a colleague had arranged for me to include in the study.

Conceptual Limits

Given the limited number of scholarly sources that speak directly to the problem of art classroom design, the literature review needed to include themes that frame the theoretical justification around what is currently known about school buildings and dedicated art classrooms, what professional standards exist that speak specifically to art classroom features, and how and where the physical conditions of art rooms intersect with the motivation to provide spaces for students in which human flourishing is a likely or intended outcome.

Additionally, because this research project includes two methodologies that are experimental in nature and founded in practices of artmaking and arts-based product design, no sources are known to exist that establish a research protocol for Design Thinking or Andy Goldsworthy's process as method.

Finally there is a certain intangible aspect attached to the intersect of well-being and spatial experiences in the studio art classroom. This is, in part, because the act of making art, in itself, can induce senses of well-being, but also because experiences with space can as well. Similarly, there is also a part of the research methodology related to Andy Goldsworthy that feels intuitive to me and that I have a difficult time expressing through words.

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Study Parameters

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This study was contained within a somewhat random set of eighteen public and private schools found in three different geographic regions of the United States of America—the tri-state area surrounding New York City, the mid-Atlantic region, and

southeast Texas, particularly Houston and its surrounding suburbs. Additionally, the research was limited to those art programs that hold classes in specifically dedicated spaces, whether or not those spaces are or were originally intended for use as art classrooms. The particular classrooms for this study were non-specific in terms of media focus. In other words, the dedicated spaces included in the study operate as generalized, multi-purpose spaces that typically house a wide variety of art making materials that are used intermittently throughout the course of a school year as they are applied to a broad range of art lessons. Since these types of classes are offered on all school levels in the United States, the study included classrooms that host elementary, middle and high school students, depending on the specific school's grade level distribution. Finally, although there are multiple approaches to the teaching of art, this study did not structure its inquiry around specific differentiations in curricula or pedagogies.

Ethical Considerations

Although the focus of the study was on the studio art classroom itself and not on the teacher or students, the topic has tended to evoke certain sensitivities regarding the public exposure of room condition and management issues. Because of this, every effort was taken to protect the identity of both the school and the participating teacher and to be as generous as possible to both entities in undertaking the data collection and analysis of each site. Additionally, in keeping with standard protocol, no photographs of students were taken during the site visits or included in the reporting of the findings.

Justification of the Research

As this study has developed, it has become apparent that the topic of the design and arrangement of studio art classrooms is a timely one. New schools are being built and occupied every academic calendar year in school districts across the country. Many of these new schools are being designed and constructed to address a variety of perceived design problems through innovative floorplans and materials, and aim to support 21st century learning goals. That little research and progress has been made in addressing decades-old problems in art classrooms seems, in itself, to be problematic. Not only are few school architecture firms equipped with the information that this study has attempted to gather, but also, the field of art education seems, up to now, to have spent little time studying the spaces that are so essential to the work that we are trying to accomplish with our students. The trend seems to be preparing to shift, as the results of this research project are finding fertile ground among both art education professionals and school designers. The question of, "If not now, when?" comes to mind. The time is now to finally engage in thoughtful discourse about these spaces that are vital to art learning and making and to actively pursue well-informed solutions to age-old problems that art teachers and their students deal with on a daily basis.

Theoretical Framework

This dissertation embeds three significant theories and also utilizes practice-based information in order to frame the research. The theoretical setting includes: (1) human flourishing as examined by Nel Noddings, Maxine Greene, and others, (2) Parker Palmer's notions of constructing a well-designed lesson and learning space—also indirectly addressing issues of learning and human flourishing, and lastly, (3) considerations related to the design of spaces, particularly what differentiates good

and bad design, including the human impact of both. These concepts are helpful in understanding the impetus for why educational spaces matter, and in the case of this study, why the design of studio art classroom spaces matter. It would be a weak argument, however, if the two following areas of practice-based information were not also included in the scaffold supporting this research. Four studies investigating either the conditions of school buildings or the state of arts education programs in the United States in the last twenty years contribute clarity and definitive data about current trends. In addition, this research is informed by a publication of K-12 studio classroom recommendations compiled by a committee of art education professionals through the National Art Education Association.

Research Goals

The purpose of this study was, first, to understand more fully what the conditions of existing general art classroom studios, or 'dedicated spaces', are in a cross-section of America's schools. To date, most of the research completed to assess the condition of arts education programs in public schools has been through statistical data analysis, detailing the number of part and full-time certified arts teachers in each school, along with the number of dedicated spaces in which art classes are held per school (National Center for Educational Statistics, 2002; Office of the New York City Comptroller, 2014). These statistics, while helpful in generating a better understanding of how schools and school districts, in part, fund and prioritize the implementation of arts education programs, do not show any usable data that defines what the appointed dedicated studio art spaces look like; nor whether or not said spaces adequately and realistically meet the needs of the art teachers and students who use these spaces for creative activity. Therefore, it has been the aim of this study to visit a relatively large number of dedicated

art classrooms, to examine their suitability and efficacy, and to identify specific areas for improvement, as they currently exist.

Educational Aims

In doing so, this study has sought to discover new ways of thinking about dedicated studio art spaces in schools and to consider how we might do things differently, particularly where current answers to age-old problems still do not prove sufficient. There are many reasons why some might think that this is an impossible task, or at the very least, one that cannot produce realistic or distinctive results. After all, most art teachers have dedicated quite a bit of energy, imagination, and resources into "making do" or "making it work" in their classrooms, day after day. The aim of this research, however, has been to search beyond what we think we already know about art classrooms and to define the problems as they exist in a variety of settings. Imagine the results, if we could act on these newly clarified problems and design art classrooms that work *for* students and teachers, and not, as is often the case, *against* them; imagine what might happen if we produce convincing apologia as to the significant influence of art classroom design on the complex and multi-faceted mosaic that is art learning, as well as its consequence on the overall wellbeing of students and teachers involved in creative activity in well-equipped studio art rooms; imagine school board leaders and administrators who tenaciously support and protect dedicated studio art spaces because they recognize the art room to be an integral part of the foundation on which a high-quality arts education is built, and who determine to endow these spaces with materials and equipment that both compel and delight. "Making do," at least in the minimally adequate sense that we often deal with in art classrooms today, might then become a former narrative, a story long forgotten.

Overview of Chapters

This first chapter begins with an example of what a change in perspective might do to alter outcomes. It also presents examples of design and arrangement scenarios in both new and older art classrooms that shed light on problematic issues that art teachers face on a daily basis, and lays out the need for a collaborative conversation between art educators and those who are equipped to effect progress in facilities provisions for art teachers and their students. Chapter I provides the first glance at the practice of "making do," while expressing hope in our ability to imagine a new narrative for art classrooms that have historically been plagued with design and arrangement issues. Finally, this chapter explains the line of inquiry expressed in the research questions, lists the assumptions not to be debated and those that will be debated in the process of this research, as well as the educational aims and goals of the study.

Chapter II begins by exploring literature related to the consequences and implications of both "good" and "bad" design, and reviews two previous studies involving school infrastructure conditions and two arts education studies that quantify support of the arts in schools as demonstrated by the hiring of certified art teachers and dedicating space in the school building for arts-related classes. The NAEA's *Design Standards for School Art Facilities* (2015) are discussed and presented as the primary source of data collection points for the research. The chapter ends by discussing the link between students' and teachers' experiences in their art classrooms and notions of human flourishing.

Chapter III provides an overview of the methodological approach undertaken for this study. A three-pronged research strategy was used in order to gather a rich pool of data for consideration. The structure of the research is scaffolded upon the rigors of a multi-case study so that the data from what has felt like a very sensitive topic can stand tests of reliability and viability. Two additional methodological approaches are presented

in Chapter III and described in detail. Their use has been chosen because each one offers a unique opportunity and perspective from which to collect, view and analyze the data. Data collection tools, namely, a checklist created to establish the presence and condition of certain design features named in the NAEA's *Design Standards* are described and explained as well.

Chapter IV details the findings of the study, which are organized into nine feature categories named in the NAEA *Design Standards* and three emergent themes. Eight other NAEA feature categories produced interesting data, but fell on the lower end of significant findings, thus, in the interest of time and space were not included in the reporting of findings. The nine reported NAEA categories are *Space Allotment*, *Universal Design and ADA Compliance*, *Furnishings*, *Technology*, *Storage*, *Sinks*, *Ventilation and Safety*, *Teacher Offices and Work Spaces*, and *Outdoor/Patio Spaces*. The three emergent themes are *Unintended Consequences/Design Gone Wrong*, *Material Limitations Brought on by Space Limitations*, and *Management of the Studio Art Classroom*. While the final emergent theme is mentioned here, and discussed briefly among the findings, it is only included because, while it was readily apparent in its significance to the findings, it was determined to need further research in order to establish a more complete understanding of its complex issues.

Chapter V begins by exploring how the original research question and subquestions needed to be reconsidered, based on the realization that the originally sought-after data was too big in scope and yet too focused on one particular aspect of human flourishing for it to be practically managed and to fit the overall intention of the research project. Further discussion in the chapter defines the newer phrasings of the questions, which include analyses of significant findings related to the NAEA *Design Standards* checklist, "making do" as a way of life in the art room, and the impetus to raise the bar from "making do" situations to those in which studio art classrooms are

designed and arranged to reflect an interest in student and teacher flourishing in a lively and inspiring creative space.

Chapter VI introduces the relationship between the findings of the study and its practice-based educational implications. Given that the lines of inquiry that are critical to this study are design-based, it makes sense to recognize that the implications lean in the direction of asking the question, "What happens if nothing changes?" But Chapter VI, conversely, also considers a trajectory of practice in which change is possible. Finally, the chapter offers new ways of seeing the studio art classroom when the findings of this study intersect with notions of human flourishing.

Chapter VII returns to the early stages of experience that generated my interest in this research topic and reviews the findings and conclusions reached as a result of its pursuit. The chapter also makes recommendations for actionable policy and practice changes and raises questions for future studies and the building of a community of art educators who actively participate in the furtherance of this discussion.

The Bibliography cites literature sources including books, journal articles, Goldsworthy's *Rivers and Tides* DVD, and internet sites that were examined in the process of conducting this study.

Due to their unique design, the Appendix includes all of the data collection checklists that were included in the Site-specific data collection binder described in Chapter III. These documents include: (1) School and Teacher Bio and Demographics form, (2) NAEA 2015 Recommendations for Studio Art Classrooms checklist, (3) Palmer's Six Paradoxical Tensions checklist, and (4) Indicators of "a place where good things happen" checklist (aspects of human flourishing). The last two checklists ended up being discarded after the first two site visits, but are included in the Appendix, along with a corresponding document that lists citations for each indicator of human flourishing. Also included in the Appendix are a short section on Definitions of Terms, and the NAEA Design Standards Findings Excel Worksheet, color coded for analysis.

Chapter II

REVIEW OF LITERATURE

Understanding Where We Are, and the Motivation to Improve

Chapter Overview

The issues related to school facility design and how the built learning environment affects senses of wellbeing and a community's (or an individual teacher's) educational goals, are many. The breadth and depth of available literature and salient research demonstrates this, but cannot, in the course of this literature review, be covered in all of the nuances and complexities involved. Thus, this chapter provides a group of carefully chosen sources that address what the current conditions of school buildings are in the United States, how art education programs are faring in recent years, where overarching professional recommendations for equipping studio art classrooms come into play, why the theoretical and practical design of learning environments is important to human flourishing, and how human flourishing is described and encouraged in educational literature.

How Design Choices Affect Us

Too often, the spaces in which we find ourselves day in and day out, whether at home, at work, in schools, in healthcare facilities, or even in public gathering places are, at best, an assemblage of well and poorly designed environments. At worst, only a few

spaces that we build and maintain are truly designed to function at the highest level of expectation in meeting the needs of the people who will spend any time there. Airlines are doing everything that they can to optimize space and profit without demonstrating much in the way of genuine empathy for the human experience of being "stuck in a cylinder" for hours on end. The world is full of abandoned buildings that, for some reason or another, either do not match the needs of potential inhabitants or are in varied states of disrepair … and thus, we build more buildings, collectively spending billions of dollars on new facilities that are not necessarily better replacements for the ones abandoned; and those discarded structures are left to become visual and physical nuisances, safety hazards, and financial encumbrances to local communities.

An irony and difficult truth, though, is that most poorly built school buildings are typically *not* abandoned. Nor are they renovated, or re-imagined and reconstructed when the designed facilities appear to be under stress or seem to cause the school's inhabitants stress. In truth, insufficiently designed schools are crammed to capacity each year with students and teachers who are expected to generate the best of learning results, no matter how well or poorly the physical environment may support or effect this outcome. Even school buildings that were initially built to be highly supportive of the human endeavor of teaching and learning must, along the way, be well maintained and occasionally evaluated for aging systems, new and evolving ways of learning, and new materials and technologies, to name but a few areas.

Before embarking on a discussion of the overwhelming problems that school children, teachers, and communities face under such circumstances, however, one must first look at why the design and maintenance of built environments might matter, in general.

The Case for "Good Design"

In 2002, the Commission for Architecture and the Built Environment (C.A.B.E.) in London, England, published *The Value of Good Design*, in which the writers of the document first stress the consequences of poor design decisions on society at-large. In the introductory comments, the organization states that "the stakes are high." "Get it wrong and we will have dysfunctional, under-utilized and unloved buildings in every part of the country." The publication suggests that it is not only more cost effective and efficient for a governing body to choose and then implement quality design strategies from the very beginning stages of planning for building projects, but also states that, in the long run, thoughtful design choices will be most beneficial to those who will eventually use and care for the spaces over the life-span of the building. They argue that "when we invest in the built environment, we must consider the impact of design throughout the lifetime of the buildings, on the places in which they are located, and on all stakeholders involved." To do otherwise would be to miss a vital consideration: that "the vast majority of a building's costs and benefits can be expressed in terms of the impact upon its occupiers, users and passersby." In other words, stakeholders in the design phase of a building project—architects, designers, funders, and community leaders—must consider the long-term consequences of their decisions, good or bad, on the community members who will ultimately inhabit those spaces on a regular basis. In the case of this study, the research has looked at the specific consequences on art teachers and their students.

C.A.B.E. asserts,

We cannot afford **not** to invest in good design (emphasis theirs). Good design is not just about the aesthetic improvement of our environment, it is as much about improved quality of life, equality of opportunity, and economic growth. If we want to be a successful and sustainable society we have to overcome our ignorance about the importance of design and depart from our culturally-ingrained notion that a poor quality environment is the norm and all we can expect from British builders, developers, planners and politicians.

The Value of Good Design is essentially a document that aggregates a group of studies specifically related to each of the larger areas of the public sector's built environment, often influenced and effected by design choices: Healthcare, Education, Housing, Civic pride and cultural activity, Business, and Crime Prevention. In each area under consideration, C.A.B.E. presents a brief description of a number studies conducted by institutions in several countries that illustrate cause and effect relationships, cost-effect analysis, and other positive outcomes that investment in good design has had on stakeholders. They make an argument for the idea that "investment in good design generates economic and social value," and that "good design does not cost more when measured across the lifetime of the building or place."

Specific to schools, C.A.B.E. cites nine studies from the United States and France that measured positive growth in the areas of student attitude and motivation, teacher morale, test scores, and graduation rates, along with a decline in grade retentions. Additionally, one school was highlighted for a notable opportunity for resource redistribution; a better design for the playgrounds and the main hallway allowed the number of lunchtime assistants to be reduced from eight to five staff members, thus allowing applicable funds to be reallocated to other areas of need (PricewaterhouseCoopers, 2000).

From another perspective, Kenn Fisher (2001), in his article on *Building Better Outcomes*, notes that

> studies on science laboratories indicate strong causal links between the quality and amount of science equipment and furniture design on the one hand and the quality of student behaviour and learning outcomes on the other. A difference of seven percent in science scores occurred between schools rated high and low in overall science facility quality.

The Overwhelming Impact of Bad Design

While C.A.B.E.'s earlier publication, *The Value of Good Design,* was a gentle reminder of the social and economic benefits of making good design decisions, their

second publication, *The Cost of Bad Design* (2006), is much more direct and strategic in seeking to prove it's point. It would appear that four years later, the organization has gathered more data, and has more evidence to present, of the effects of poor design choices on the built environment. But more to the point, it seems that C.A.B.E. has determined that the urgency of the call to design better environments needs a less polite push. Statements such as "We let a lot of people off the hook if we don't talk about the cost of bad design," "What angers me is the sheer waste of public money that results from bad design," and "We continue to see badly laid out housing estates, hospitals that aren't fit for purpose, schools that aren't inspiring and public spaces that are green deserts," are a battle cry, of sorts, and make clear assertions about the need for change. In fact, John Sorrell CBE, Chair of C.A.B.E., ends his introductory remarks with a bold statement: "There is no excuse for bad design, and no reason to accept poor standards, yet exemplary buildings remain the exception."

Two articles of the three within this publication discuss specific cases of large scale, "design gone terribly wrong." Both articles lay out the gross amount of social and economic costs accrued by two communities due to poorly designed urban projects; projects that, at some point, were envisioned to be comprehensive solutions for, or re-imaginings of, problematic community spaces. The articles spell out the extensive work and great expense that had to be undertaken in order to attempt to resolve these problems. Photographs and statistics (funding, crime, resident surveys) are presented, as well as narrative from those who worked to rectify the issues that arose from the original poorly designed sites. The case studies include information on financial costs, economic and crime statistics, photographs, and pre and post renewal resident surveys. One extreme case told of a major building project that was torn down after only twenty years of use, even as it had been planned for a life cycle of at least sixty years, at a 92 million pound cost to British taxpayers.

What We Know About Our Schools

In the past 20 years, both the U.S. government and the American Society of Civil Engineers has generated two noteworthy reports that speak to the condition of America's school buildings.

The GAO Report

In the early 1990s, the United States Government Accountability Office (GAO) was asked by members of the U.S. Senate to conduct a study on the condition of America's school buildings. A study of this kind had not been undertaken since 1965, when many of today's schools were being newly constructed or were less than thirty years old.

In February of 1995, the GAO published their report on statistics gathered between April and December 1994, concluding that the nation's schools would need about 112 billion dollars to repair or upgrade facilities to achieve a standing of good overall condition. Many of the repairs were related to accessibility upgrades, hazardous materials removal, environmental improvements, and major infrastructure, like plumbing, in need of repair. To collect appropriate data that would demonstrate a strong sampling, a survey was sent to a randomized group of 10,000 schools in over 5,000 school districts nationwide. The questions were sent to those who were directly associated with the schools' facilities departments, and included requests for information on the physical conditions of school buildings and major infrastructure, the state of the school's environmental conditions, the amount that districts had spent on facilities improvements in the three years prior, anticipated spending for the coming three years, and estimates for total cost of any repairs and replacements that would bring schools to a standing of overall good conditions. The GAO also sent personnel to observe and record data at 41 schools in ten selected school districts in variable socio-economic and geographic regions in order to be able to report more adequately on the conditions from a ground level vantage point.

The resulting good news, if it can be called that, was that "two-thirds of America's schools reported that all buildings were in at least overall adequate conditions, at most needing only some preventive maintenance or corrective repair." The more discouraging news was that one-third, or 14 million students, were attending school in buildings that needed extensive repairs or replacement.

The 1995 GAO's report also shed light on a few pieces of interesting information. One example being that the report concluded that the age of a building is not necessarily an indicator of poor physical conditions. Rather, it is the care of the building over time that better indicates how well it will age. The GAO's report concluded that "buildings that have been well maintained and renovated at periodic intervals have a useful life equivalent to a new building." The report highlights three schools in Chicago that were all built between 1926 and 1930, and found to be in very different states of repair. One had been well cared for, and thus, was seen by locals as a top-rated school facility. Another had one of the poorest ratings among local community members and was in great need of major repairs. The last was one that had been in poor condition, but had undergone recent renovations, putting its condition in the category of average or typical for schools the area.

The second interesting bit of information found in the report is related to funding for much-needed repairs. Because educational funding is often tasked as local and state responsibilities, when federal help is offered, it is not to uniformly and comprehensively meet the needs of schools. In 1994, Congress passed a resolution, called the Education Infrastructure Act of 1994 to address, in part, the need for educational facility improvements on a national level. While the 110 million dollars allocated in the bill for urgent repairs seems to be a large amount of funding, compared to the 112 billion needed to comprehensively provide the goal of good overall conditions for school facilities, it was a move in a forward direction; particularly since it can now be stated that, at least at one point in our history as a nation, Congress has officially proclaimed that the

children of this nation should be educated in environments that are supportive of learning, simply by virtue of housing them in physically and environmentally safe buildings.

Also in the report, and along with Congress's above-mentioned proclamation, is a reference to court cases that address the need for "high-quality learning environments as essential to educating the nation's children." One court case even went so far as to see the need to define what "decent conditions" for learning environments should be: "structurally safe, contain fire safety measures, sufficient exits, an adequate and safe water supply, an adequate sewage disposal system, sufficient and sanitary toilet facilities and plumbing fixtures, adequate storage, adequate light, be in good repair, and attractively painted, as well as contain acoustics for noise control" (Edgewood Independent School District v. Kirby, May 1987).

Infrastructure Report Card (2013)

Following the GAO report of 1994, nearly 20 years passed without updates or follow-up on the progress of the nation's school building conditions. In the absence of an update, the American Society of Civil Engineers has attempted to fill in the gap, even if only marginally (2013). This report, written by an advisory group of civil engineers, evaluates and issues grades for 16 areas of our nation's infrastructure, including schools. The report analyzes 8 criteria within each, including capacity, conditions, funding, future needs, operation and maintenance, public safety, resilience, and innovation. According to the most recent report, published in 2013, the nation's infrastructures, including schools, are not being updated or maintained in accordance with realized and anticipated national growth trends. The 2013 Report Card For America's Infrastructure gives America's schools a grade of D. According to the ASCE's grading system, a D means that "the infrastructure is in poor to fair condition and mostly below standard, with many elements approaching the end of their service life. A large

portion of the system exhibits significant deterioration. Condition and capacity are of significant concern with strong risk of failure."

The report also states that funding for schools has decreased by nearly half since the recession of 2008. The funding of schools is not solely the responsibility of the national budget, rather the impetus lies on state and local governments for the majority of funding. Either way, nearly half of America's schools were built over 50 years ago, with many of those buildings in need of major renovations or overall replacement today. Costs to replace or repair these buildings are estimated to be nearly 270 billion dollars.

What We Know About Our Arts Education Programs

In the last 15 years, two reports have been published that offer insight into the state of arts education programs in schools—one, as relates to publics schools across the nation, undertaken in 1999, and the second, undertaken in 2014, as relates to New York City Public Schools.

Both reports collected quantitative data on arts education programs in public elementary and secondary schools; this included data on all arts programming: music, band, drama, visual arts, etc. The information published was a breakdown, or compilation of facts related to at least three specific areas that are, in both reports, considered to be indicators of a school's ability to provide and support a quality arts education curriculum for its students. These areas are: the number of arts-certified full-time teachers on staff, the number of arts-certified part-time teachers on staff, and the number of dedicated spaces that house arts classes in these schools.

1999-2000 Report on Arts Education

This report is based on data collected from elementary and secondary school principals and from elementary school arts specialists and classroom teachers during the 1999–2000 school year. The art teacher-level component provides data on the educational backgrounds and experience

of arts teachers and the curricula and learning environments that characterize arts education, (National Center for Educational Statistics, 2002).

The most significant figures from the report noted that only 56% of public elementary schools and 87% of public secondary schools that offered visual arts had a dedicated room with special equipment for teaching art. Though the rest of the data produced in the report is interesting to note, most of it is extremely nuanced and does not seem to be helpful to the pursuit of the research questions in this study.

As to methodology, this report seems to have collected more and varied data from art teachers themselves than the following report from New York City schools, but the survey's greatest interests seemed to be in gathering information on the teacher's training, background and experience, and the layout of the teacher's teaching schedule, professional activities, and curricular plans. Of the 18 sections included in the survey, only one addressed somewhat general questions related to "adequate support for teaching visual arts," although no question in the section directly addressed the suitability of the individual art classroom as a physical teaching space (NCES, 2002, Appendix C).

2014 NYC Comptroller's Report on the State of the Arts in New York City's Public Schools

"This report by the Office of the New York City Comptroller, examines the state of arts education in New York City Public Schools as it stands as of April 2014." Similar to the study above, quite a few statistics are presented, including a list of every public school in New York City, each school's number of dedicated arts spaces, and number of certified full and part time teachers, its arts and cultural partnerships, borough location and grade levels taught. Also included are a historical listing of arts programs and plans since the 1970s, how the programs were funded, what the current shortfalls are, and what laws have been enacted that are supposed to be mandating a culturally rich arts

experience for students in NYC Public Schools. The questionnaires for this study were sent to school principals, who answered on behalf of the entire school and arts faculty.

The Executive Summary states that many public schools in New York City are "in violation of New York State Law, which sets minimal instruction requirements that schools must meet for the arts at each grade level, and deep disparities exist between schools at all grade levels. Twenty-eight percent of schools lack even one full-time, certified arts teacher; 20% have neither a full- or part-time certified arts teacher; and 10% have no dedicated arts room. These numbers are not specific to the visual arts, so they may not truly describe the precise situation for students' exposure to the visual arts in New York City public schools. The bigger concern of the report, given the current educational climate in New York City, is that the Department of Education and its schools adopt a "no-net loss" of arts rooms when district schools are co-located with other district or charter schools. They suggest that the DOE specify exactly how it will preserve existing dedicated art rooms when schools are being reconfigured, and that all newly constructed schools include dedicated arts spaces. In the DOE's own 2012-2013 Principal Satisfaction Survey, 25% of principals cited space as posing a significant challenge to their school's arts program.

Dedicated Spaces for the Visual Arts in Schools

Stating the Obvious?

Neither of these studies, dedicated to collecting and presenting data about the state of arts education programs in public elementary and secondary schools in all or part of the U.S., do much to evaluate or analyze the conditions of dedicated spaces for the teaching of the visual arts. Little consideration seems to be given to how learning is impacted by the *condition* of the space or how students and teachers fare in them. Sadly, if anything else, these studies offer yet another piece of evidence that suggests

that school leaders, governing institutions, and even those in the field of art education do not consider the state in which we find studio art classrooms in schools as vital to what we want students and their teachers to experience there. If it were otherwise, it would seem obvious that studies seeking a richer understanding of the state of arts education programs' specifically dedicated spaces would take a higher priority in today's educational climate; particularly given the urgent picture painted by the data collected to date about school facilities' conditions. If school conditions, in general, are problematic to life in contemporary schools, it is not a far leap for art educators and others to realize that our very unique and specialized subject area that relies so heavily on its studio classroom setting is also suffering under such conditions. It is imperative, then, to conduct a comprehensive study that puts eyes on what schools have deemed as "dedicated spaces" for the teaching of visual art, in order to determine the spaces' efficacy as designed and arranged activity-filled learning environments.

What is "Good Design" for Art Classrooms: The Tension Between Aesthetics and Function

A comprehensive study of the condition or state of art classrooms in a broad range of schools in the U.S., such as this one, can only be undertaken given a starting point— specifically a consensus on what should be found in a well-equipped or well-designed art classroom. As it is, many architects, designers, school leaders, and even some art teachers seem to have a difficult time knowing exactly where to start. Most involved parties want new schools to look modern, innovative and inspiring, with each new school often becoming a source of great pride for both the architectural firms that designed it, and for the community in which it is located. I have been in brand new art classrooms in new school buildings, with one having been included in this study. These brand new studio art rooms, in my experience, present an interesting conundrum—a tension between the aesthetic of a "shiny new space" and the day-to-day function of the new classroom. It can be argued that aesthetic elements of design are equally essential to art

classroom design as is effective utilitarian design. But one without the other creates a

unique set of struggles for art students and their teachers. If our studio art classrooms,

by their very essence, are not visually stimulating and aesthetically inspiring, we have

likely missed a teaching opportunity, at the very least. Yet if the students' and teacher's

functional needs are not also met, the aesthetic details of the space will only serve as a

distraction from the missing utilitarian components for a short while. At some point after

school occupancy begins, a shiny, new, but poorly designed art classroom's contribution

to the work and wellbeing of the human beings using the space, and its support of the

flourish of activities meant to take place there, will fall short and be felt, deeply and

frustratingly—potentially for the lifespan of the space. It is, therefore, imperative to

understand the diverse and evolving needs of those who will occupy the space in the

years to come, and to then design a space that both inspires and serves its constituents

well.

That said, a multi-purpose studio art classroom is a uniquely complex space, with

a variety of design needs and potential problems that must be addressed in order for

optimal learning and flourishing to occur within its walls. In the interest of understanding

what good design might look like specifically in relationship to art classrooms, it is

advantageous to know what professionals in the field consider to be the most important

elements that are needed in the space.

The Professional Guidelines—NAEA Studio Design Standards

The National Art Education Association is the largest professional association of

art educator's in the United States of America. As such, it has a wide range of

professional voices from which to learn and with which to collaborate. In 1994, it

published a set of art classroom design recommendations that were created by a

committee of leaders in the field, specific to a variety of problematic or dynamic areas

that would benefit from clear and defined guidelines. This publication, *Design Standards*

for School Art Facilities, was revised in 2015, and has been utilized as a primary source of analysis for the research conducted in this project. Whether or not these guidelines could be improved upon is a question that is addressed to a certain degree in the Discussions chapter. Although the NAEA's recommendations are quite inclusive, it is important to see them through the lens of an active, inhabited space, and in the voices of the teachers that use these dedicated multi-purpose, general art classrooms on a daily basis. Therefore, this study has attempted to examine them in that context.

Included in the *Design Standards for School Art Facilities* (2015), are a variety of very specific recommendations for seventeen areas of interest: universal design, space, location of art rooms, patios and outdoor spaces, art educator's office and work station, basic furnishings, walls and floors, storage construction, storage types, presentation space, lighting, acoustics, sinks, ventilation, technology, security, and safety. Within each category are up to thirteen specific utilitarian design features, with sinks having the most detailed list. Recommendations include a classroom space of fifty-five square feet per student, a one-to-ten sink-to-student ratio, and locked, ventilated, fireproof storage for hazardous materials, along with over 100 other specific recommendations.

A few example floor plans are included in the published *Design Standards*, as are photographs of a variety of classroom features. The publication also includes recommendations for specialized art studios, such as those used for ceramics, printmaking, and fashion design. These specialized classrooms are not a part of this study, for manageability reasons.

For the purposes of this study, a generalized checklist of all the recommendations for general studio art classrooms, not specific to elementary or secondary grade levels, was compiled from the narrative form of the *Design Standards* publication and can be found in Appendix A. This checklist extensively addresses the 117 specific feature recommendations mentioned in the publication so that it could be used as a tool for data

collection and to ensure a consistent analysis of each of the 17 overarching categories

that are defined in the NAEA's recommendations.

Where Building, Classroom, Curricular, and
Pedagogical Design Meet the Needs of the Child

The Giant Stone Wall

If we start with the assumption that our society operates from a core value that

desires to see its children flourish, then one might also reasonably assume that our

efforts to educate our children would include providing them with schools and

classrooms that support and encourage successful learning outcomes. If the first

assumption mentioned above is valid, the second assumption would seem to be a

natural byproduct of the first. Unfortunately, the years of adapting to a fast-growing

population and an ever-evolving education system, among other things, has created a

great deficit over the years in what local, state, and federal governments in the U.S. can

do to keep up with growing school facilities concerns. As I mentioned earlier, the latest

figures from the American Society of Civil Engineers estimate that 270 billion dollars is

needed to bring all of the nation's schools into an 'overall good condition' rating (2013).

This is certainly an overwhelming figure and may cause many to throw their hands up in

resignation, especially if they are used to systemic and institutional blockages already

preventing progress. But to look at the problem metaphorically, the only way to remove

a giant stone wall that hinders advancement is to pick up the first stone and move it …

especially if that stone wall is standing in the way of good things for our children. Nel

Noddings (2003b) states that if we care for our students, "we should be prompted to

provide better conditions by a collective uneasy conscience" (p. 242). So, where do we

find the motivation to pick up that first stone from the giant wall that stands between us

and our ability to provide schools with studio art classrooms that are well-designed, well-

equipped, and that support the best arts experiences for our students and their teachers?

A Place in Which to Flourish

According to the Merriam-Webster Online Dictionary (2015), students and teachers who are flourishing are those who are "able to achieve success," are found "to be in a state of activity or production," and who are "able to reach a height of development or influence." If you have worked in art classrooms with children and have seen what creative little minds are capable of producing when they are enticed by materials and are invited to play and explore, it is easy to translate this dictionary definition of a word into a visual image of students flourishing in art classrooms.

We might wonder exactly how a school system, an architect, or an art teacher assists children in achieving moments of flourishing, and this study has, from its genesis, attempted to consider that question. In some ways, it is as simple as what, after a lengthy conversation on the subject, a colleague recently named as "creating a space for good things to happen" (personal conversation with Dr. Sean Justice, Spring 2015). Yi-Fu Tuan (2008) suggests that we flourish in "intimate places … places of nurture, where our fundamental needs are heeded and cared for without fuss" (p. 137). The question is: What might this look like in an art classroom?

It might be when a student sees her favorite color in various materials throughout the art classroom. It might be when she does not have to wait five or ten minutes for a special tool to be passed around the room among twenty or more budding artists. It might also be when another student gets to use a 6B soft graphite drawing pencil for the very first time and discovers how vastly different it is from the standard #2 pencil that he has grown so accustomed to so far in his school life. The list of possibilities is endless … because the unique array of materials and methods that inspires one child differs in and through the hearts and learning processes of every other child in his art class … and in

every child in every other class in a particular school … and in every child in every other

school across the United States. The materials, textures, colors, brush strokes, tools,

etcetera, that motivates, delights, and inspires each student is as unique a configuration

as is the makeup of a snowflake.

A recognition of and response to the unique nature of each student's creative

interests does not imply that we must tailor every activity specifically to every child.

Rather, it suggests that if we prepare a space where options exist, and that children,

their preferences, their delights and fears, and their stories are offered a hospitable

space in the art room, they might experience more robust art learning outcomes and

leave their art classroom with a deep sense of well-being and excitement. Parker Palmer

(2007) discusses this at great length in his book, *The Courage to Teach*. He states that

the best learning spaces are, among other things, hospitable, and that not only should

"we treat our students with civility and compassion, but also that we invite our students

and their insights into the conversation. The good host is not merely polite to the guest;

the good host assumes that the guest has stories to tell" (p. 82). Jim Greenman (1988)

states it another way when he argues that "a child feels significant when his or her

concerns are paid attention to and he or she is given some responsibility for something

that matters" (p. 34).

When we invite people into our homes, we seem to understand this concept a little

differently than we often do in our classrooms. At home, we prepare for our guests'

arrival by making sure that the space is clean and inviting. We purchase needed items

ahead of time, within the boundaries of our budget, and with consideration to those

specific people that we will soon welcome at our door. When they arrive, we offer them

our best: comfortable accommodations, a kind smile, generous portions at the dinner

table, a delightful conversation, a sense of belonging. It is safe to assume that we invite

them in because we *want* them to be there and we hope that they feel special and cared

for while they are with us in our homes. Most would agree, at least informally, that this

example is what human flourishing looks like in a colloquial context. In my experience, we often walk away from shared hospitability-based experiences with smiles on our faces and a spring in our steps, whether we are the one who invited others into our home or are the ones who were invited in.

The question is, if we are watching, will we see that children who find an inviting space in which to flourish in their art classrooms are walking away with smiles on their faces and a spring in their step as well?

A Space for Surprise, Delight, Joy, Happiness…

If we assume that we care for our children and desire for them to flourish, it would follow that we hope to see them experience a myriad of positive reactions in response to what goes on in their learning environments. There are a number of ways in which art educators witness the experiences with surprise, delight, joy, and happiness, among other emotions, that children have; either with the materials themselves, with how a material responds to manipulation, in seeing what a fellow student creatively accomplishes, or when they get to use wiggle eyes or other fun and unique items, among many possibilities. The list is limitless. The question is, do we look to *inspire* these responses intentionally, by studying our students' interests and curiosities? Noddings (2003b) suggests that, "if the aim of teaching is delight and wisdom, then the pedagogical methods chosen should make these ends likely. It means also that, in monitoring the effects of our work, we will look for signs of joy, deep thought, and eagerness to … (*draw more, paint more, create more …*)" (p. 252; *Noddings's content examples from studying poetry have been replaced by me with art examples*). She also notes, "When something gives us pleasure, we are inclined to study it more carefully … the end result is a deep form of satisfaction" (p. 244). Further, Maxine Greene (2001) connects the element of surprise to notions of freedom when she argues that "surprises,

you will admit, like the unpredictable, are an aspect of that space where we find ourselves (if we are aware and lucky) to be free" (p. 204).

Noddings (2003b) suggests, however, that it is not always the case that those in schools endeavor to see delight, joy, surprise, and other happy byproducts of learning, such as senses of freedom. She submits that "it may also be, however, that the teachers were bothered by their students' excitement and fun…" (p. 243). This might not be because a teacher is uncaring. Greenman (1988) notes that "everything is managed and patterned and scheduled and governed by the patterns imposed by the sensible dictates of regulation, insurance, the bottom line, and the compromises of group living," and that, "fewer and fewer opportunities to simply 'mess about,' follow one's own inclinations and dreams," exist; thus, "more and more children of each successive generation are losing opportunities for delight and wonder" (p. 28).

Many contemporary school architects and designers know that some built environments have the power to discourage a multitude of "good things", while others have the power to delight and inspire. K. Fisher (2001), in *Building Better Outcomes: The Impact of School Infrastructure on Student Outcomes and Behaviour*, writes that "school architecture can facilitate the transmission of cultural values, stimulate or subdue, aid in creativity, slow mental perception and cause fear and joy." Given this, it seems a worthy endeavor to seek to understand how student and teacher experiences with somewhat intangible, yet perceptible emotive states might be influenced by the physical state of the studio art classroom.

What is Human Flourishing?

Human flourishing is, in many ways, a difficult notion to define. There are dictionary definitions, certainly, and there are a few self-rated psychological scales that

have been created to attempt to measure a person's degree of flourishing as gauged by

life satisfaction. These two avenues of pursuing a meaningful context for defining human

flourishing, however, seemed to me to fall short of explaining what indicators might exist

in the lives of children. As a part of my literature review, I searched for and found a

consensus of indicators across multiple sources, each one considered an expert voice in

matters related to the needs of children or educational philosophies that support notions

of human flourishing: (1) The United Nation's 1959 *Declaration of the Rights of the Child*,

(2) Jim Greenman's *What All Children Need* (2011), and (3) a consortium of other

scholarly sources that include Nel Noddings, Maxine Greene, Parker Palmer, Yi-Fu

Tuan, and specifically related to art classrooms, Diane B. Jacquith and Nan E.

Hathaway.

     Among these sources, I found that, together, they collectively triangulate and

delineate at least eight distinct areas of need that children have. It is interesting to note

that in determining what both the U.N.'s *Declaration of the Rights of the Child* (1959) and

Greenman (2011) specifically refer to as a 'need' of children, neither they nor the

consortium of scholarly contributors imply that, in meeting a child's needs, the bare

minimum is preferred or even acceptable. Instead, their language suggests the 'need' is

for children to thrive, not simply survive. For example, the *Declaration of the Rights of*

the Child (1959) uses language that states that "the best interests of the child shall be

the guiding principle." Greenman (2011) uses the phrase, "an environment rich in…,"

And Maxine Greene (2001) and Parker Palmer (2007) both use the phrase "untapped

possibilities" when talking about a learning environment that supports the needs of

children.

Eight Indicators of Human Flourishing

From the sources mentioned above, the following eight indicators of human flourishing in the lives of children emerged:

Freedom and free will. Jaquith and Hathaway (2012) describe it in the studio art setting as "these little children are growing strong in freedom to engage in authentic creativity. These children are artists." Tuan (2008) posits that

> Ùpaci[usness i• cl[selˆ æssociat^d ˛ ichʌ©ʌense f ei} g ɬ^e. Freedom implies space; it means having the power and enough room to act. Being free has several levels of meaning. Fundamental is the ability to transcend the present condition, and this transcendence is most simply manifest as the elementary power to move. In the act of moving, space and its attributes are directly experienced. (p. 52)

Finally, the *Declaration of the Rights of the Child* (1959), states the foremost right of a child is to be recognized as an individual who exists as a free person and who is treated with the dignity that all human beings deserve.

Belonging to a community. Palmer (2007) recognizes the need of the learner to exist both together and independently, but within a community of learners. He finds that "students are far more motivated by the fact that their individual learning enables them to contribute to the communal inquiry" (p. 131). Greenman (2011) advises that children need an "environment rich with people," and that they need family and to belong to a community. The *Declaration of the Rights of the Child* (1959) states that in order for a child to experience the "full and harmonious development of his personality, she needs love and understanding," especially in the context of a caring and affectionate community.

Personal significance. The *Declaration of the Rights of the Child* (1959) states that a child is entitled to develop her "abilities, her individual judgement, moral, and social responsibility, and to become a useful member of society." Greenman (2011)

expresses a child's need to experience a "childhood where they are significant, with places to call their own," and states that *"a child feels significant when his or her concerns are paid attention to and he or she is given some responsibility for something that matters."* Jaquith and Hathaway (2012) recommend that children be entrusted with personal responsibilities and purposeful work in the art room (p. 60).

Opportunities for play. Jaquith and Hathaway (2012) also argue that play and discovery make way for "good things" and that "*with practice, children are adept managers of their own creativity and capable of far more than adults require of them. Schools (art classrooms) can and should be welcoming places for students' original ideas*" (p. 63). The *Declaration of the Rights of the Child* (1959) states that "the child shall have full opportunity for play and recreation," and Greenman (2011) states simply that all children need "an environment rich in play."

Needs are met. The *Declaration of the Rights of the Child* (1959) states that the child "shall have the right to adequate nutrition, housing, recreation, and medical services," and to receive a "free and compulsory" elementary education, and to "be among the first to receive protection and relief." Greenman (2011) and Noddings (2003a) both emphasize that children's fundamental needs should be heeded and cared for, while Jaquith and Hathaway (2012) suggest that, even in the art room, there should be sufficient materials available for the creative needs of the curricular goals of the teacher and the creative responses of her students (pp. 60-61).

Personal development, achievable success. Greenman (2011) states that children need an environment "rich in experience," while Greene (2001) and Palmer (2007) encourage that students feel that they can reach their "untapped potential." Jaquith and Hathaway (2012) suggest that children need to feel secure, comfortable, and welcome to pursue "their own vision, devising ways of interacting with materials to make that vision manifest," (p. 63). Finally, the *Declaration of the Rights of the Child* (1959) states that children "shall be given opportunities and facilities, by law and by

other means, to enable him to develop physically, mentally, morally, spiritually, and socially in a healthy and normal manner and in conditions of freedom and dignity."

Opportunities to learn. Palmer (2007) suggests that learning is enhanced "when the subject itself is at the center of the learning circle" (p. 105) and that when this happens, students have "direct access to the energy of learning and life" (p. 122). Noddings (2003b) also sees signs of learning taking place when students are "deep in thought," and demonstrate an "eagerness" to engage with the subject at hand (p. 252). She posits that learning is measured by meaningful engagement and highlighted by moments of success and deep satisfaction—"…when something gives us pleasure, we are inclined to study it more carefully … the end result is deep satisfaction" (p. 244). Greenman (2011) states that children need "an environment rich in teaching," and the *Declaration of the Rights of the Child* (1959) describes the right of children to enjoy educational experiences that will allow for personal growth and development.

Experiences with joy, surprise, delight. While the *Declaration of the Rights of the Child* (1959) does not specifically use words such as joy, surprise, and delight, it does state that children have the right to play and recreation, which often produce, in their enjoyment of them, senses of joy, surprise, and delight among children. In addition, Greenman (1988), Noddings (2003b), and Greene (2001) address these emotive responses as the aim of teaching, and Greene and Greenman also mention senses of wonder as a benefit for students in learning environments.

Designing for Flourishing and Learning; Lessons from Parker Palmer

Few within the literature represent such significant thinking on the comprehensive layering of issues involved in the acts of the teacher in arranging her learning space, pedagogy, and aspects of human flourishing as Parker Palmer (2007) has been able to

accomplish. His work in general is a thoughtful consideration of the teacher's role and her responsibilities toward her students, but also keeps closely connected to the human experience embedded in learning environments such as classrooms. In his book, *The Courage to Teach*, he constructs an optimistic framework for what intentionality and good practice look like in the teaching profession. There is much more in his collective work than is mentioned in this review of the literature, but the most salient points to this study are included here.

Palmer's (2007) theories on designing a classroom session offer quite a bit of insight into how the design and maintenance of studio art classroom spaces might connect with the pedagogical and curricular decisions of the art teacher, as well as her desire to support human flourishing in her studio classroom. The following points are not meant to suggest that there is a direct correlation between them and some prescriptive plan for designing, arranging, and managing studio art classrooms. Rather, Palmer simply suggests that a good teacher will design her classroom session, including the physical affect, around these practices, among others:

- She nourishes and protects her students (p. 80)

- She engages her students' souls (p. 20)

- She makes space for her students' voices (p. 83)

- She is hospitable toward the young—usually resulting in a world more hospitable to herself (p. 51)

- She co-creates, practices open trusting, and realizes that her gift is her ability to "dance with her students" (p. 74)

- She makes the subject the center of attention—opening a space where students can have a conversation *with* the subject and with each other, and are able to learn from each other (p. 130)

- She creates and builds community (p. 118)

- She brings students into the circle of practice in the field, teaching them how to think like…(artists), "rather than merely how to lip-sync the conclusions others have reached," (pp. 124-125)

- She allows and teaches students to feed themselves on the rich 'food' of the subject. She readies them for active learning (p. 153)

- She engages in skillful practice (pp. 134-138)

While this study has not relied heavily on the above list of teacher practices, I have included it in the literature review because it seems helpful to understanding the power and resource that the teacher brings to the shaping of a learning environment for her students. In truth, the studio art room cannot support human flourishing simply by its physical features, nor can the art teacher enact the learning goals she has for her students without a physical learning environment that supports her pedagogical and curricular endeavors.

Chapter Summary

In summation, this chapter addresses the physical space of the studio art classroom, the pedagogy practiced there, curricular and material choices, and notions of human flourishing, which are all intricately woven together to create a place where "good things" happen for art teachers and their students. This literature review sets the stage for a study that examines the "dedicated spaces" that schools allocate to multi-purpose studio art classrooms. First, it ponders how design choices have influenced human presence in a space, and how one organization from the United Kingdom has presented studies of both "good" design outcomes in a number of countries, and the cost and human consequence of "bad" design projects that went horribly wrong. This seemed an important grouping of information to include in the literature review, because the thesis of this study is that, even in newly constructed school buildings, design decisions are

currently being made that will inadvertently create problematic spaces for art teachers and students.

For the purposes of this research, it was important to trace the studies that were undertaken in the last twenty-five years on the condition of school buildings in the U.S. and on the state of arts education in both the U.S. and New York City specifically. What became apparent through the discussion of these studies is that, to date, there has been very little data collected about the current conditions of dedicated visual arts classrooms in schools in the U.S. Thus, the lack of data and salient literature confirms the need for this study.

Finally, because I have spent a number of years involved in K-12 art education, I have a strong appreciation for the connection between the studio art classroom and its capacity to influence students' senses of well-being. Such a creative space as the art room has, at its core, the potential to become a place where "good things" happen. But if the creative space or pedagogical impetus lacks certain qualities, it may negatively influence outcomes that lead to human flourishing. And although the research study undertaken for this dissertation did not directly pursue an in depth study of human flourishing in the art room, the literature is presented here so that the findings related to the dedicated art classrooms included in this study were able to be viewed through the lens of human flourishing in the Discussion chapter.

Chapter III

METHODOLOGY

Finding the Line

Overview of Methodology

This study explores the landscape of the studio art classroom by examining the physical environment in which art students and their teachers learn about and make art in schools. While the number of dedicated spaces for the arts have been queried and identified as one of the factors that demonstrate a school's commitment to arts learning (National Center for Educational Statistics, 2002; Office of the New York City Comptroller, 2014), in depth, on-site research on the condition of classroom spaces dedicated specifically to the visual arts has not been pursued via government or academic channels to date. Given that, this research project attempts to begin to fill the gap between the previously recognized accounting factor known as "dedicated spaces" and the situationally real brick-and-mortar classrooms that, by the thousands, are currently housing art classes for K-12 students throughout the United States. In order to pursue the lines of inquiry laid out in Chapter I as the Research Question and Subquestions, a qualitative methodological approach was undertaken using a mixed method layering of data collection and analysis devices.

**Initial Foray into the Spatial Problems of Studio
Art Classrooms—Two Informal Pilot Studies**

The early groundwork that led to this dissertation research project was laid through two informal pilot studies with two different art teachers, observed in their respective classrooms, which were located in socioeconomic communities and educational cultures on opposite ends of the spectrum, in regard to school types and economic circumstances.

One school is an urban public "small school" that shares an over 100-year-old building with three other small schools, with the art room in this particular school's space not having been originally designed to be used for art education. The school serves lower-income families and, according to the teacher, struggles with the frequent turnover of school leadership. The room assigned for art classes is rather small for the number of consumable materials and art equipment housed there, the approximately 32 high school bodies that inhabit the space during the five daily visual art classes, and books, bookshelves, and bins from the two English classes that are held there during the art teacher's planning bells.

The other school that provided an informal pilot study for this research is an elite private school located in England's idyllic southern countryside. Its students predominantly come from upper-middle to upper-class households. The art room, at the time of my first visit, was located in a decently-sized portable building, but construction on a new stand-alone art building was slated to begin during the upcoming summer break.

My interactions with the two teachers, their classrooms, and their schools' distinctive characteristics were not initially or deliberately calculated to be part of a pilot study as such, but, instead, both entered my doctoral pathway somewhat serendipitously. The small urban public school was recommended as a possible research scenario by a student teaching candidate who had observed in the classroom

and, upon hearing of my research interest in the design and arrangement of studio art classrooms, suggested that this particular classroom would be of great interest to me and my research due to the difficulties of arrangement in the space, which she witnessed while on a class observation assignment. I arranged to meet with the teacher to observe the space and eventually conducted ten site visits in order to help the teacher clean up, rearrange the space where possible, and make recommendations for how the school might inexpensively procure some shelving to replace a wall of built-in lockers that were broken and taking up precious real estate in the already too small room. Unfortunately, before we could complete the project, both the current principal and the teacher I was working with left the school in pursuit of less stressful situations.

The second school was introduced to me by a teacher friend I had met while on sabbatical in England, who, also after hearing of my research interests, suggested that I might want to meet and observe her colleague, the art teacher at her school. My friend spoke of the highly admirable work of the art teacher and the fact that the school was about to construct a new visual art building at a cost of nearly two million dollars. I made arrangements to observe the art classes at this school for three separate days and was given access to the design suggestions provided to the architects as formulated by both the art teacher and two visiting resident artists.

Data during both of the informal pilot studies were collected through audio-recorded casual interviews with the teacher, the collection of historical documents where available, detailed photographic documentation of the space, and class observations. During analysis of both sets of data, patterns began to emerge that suggested that, although the two schools are seemingly as diverse as two schools could get, the information I was discovering about their art classrooms told a different story. That story seemed to hint that both art teachers, regardless of the circumstances of their art classrooms, were unsure how to advocate for the improvement of their studio spaces and were not equipped with the kind of information that would help them to inform their

administrators what types of furnishings or design decisions might assist them and their students in the art learning that both teachers seemed passionately connected to. Whether it was the teacher at a financially troubled school who was not confident about asking her administration if the old broken lockers could be removed and replaced with inexpensive open shelving, or it was the teacher who had a two million dollar budget for a free-standing building, but could not offer many specific design and function suggestions beyond the request for a kiln, an office area, and a gallery space, both situations offered insight into how worst-case and best-case scenarios struggle with similar problems, in terms of provisions for art classrooms. Ultimately, it became evident that neither the art teachers themselves, their administrators, nor those who might participate in building, renovating, or facilitating their art classrooms have a clear picture of what types of design strategies, furnishings, or other provisions, either hinder or help the art teacher and her students to thrive in the learning space that is the art room.

Research Design

This study used a mixed-method approach, employing a multi-site case study as the primary structural framework for the research. Two additional complementary methods were used to stimulate more robust meaning from the data; both methods, which, to my knowledge, are new to academic research settings, have generated unique qualities in their original settings that make them constructive and vibrant candidates for collecting and analyzing data in the context of this dissertation. They have been chosen because other methods reviewed seem to fall short of where the potential exists to collect rich and nuanced information from the complicated, diverse, and dynamic environment that is the studio art classroom.

The first of the two new methodological approaches follows artist Andy Goldsworthy's self-described process as he enters a place and engages with its natural

elements, its history, and its inhabitants, human or otherwise. I will describe my methodological approach of gleaning from his processes further down in this section and will occasionally refer to this approach by the phrase, "Goldsworthy as Methodology." The second of the two new research methods is borrowed from a common process widely accepted as essential to commercial product design called Design Thinking. Both "Goldsworthy as Methodology" and Design Thinking have, at their core, the motivation to understand a group of phenomena, a pattern found in similar objects and the surrounding ecology, or a problem that could benefit from new ways of seeing. My desire to understand *what is* in studio art classrooms—not only the physical aspects of the spaces observed, their sometimes seemingly mundane minutiae, and their distinct features, but also the human experiences within—has drawn me to both of these methodologies as kindred to my own process of entering and evaluating the dedicated art classrooms in which I taught during my career as a K-12 art teacher.

The three-pronged grouping of a multi-case study, Goldsworthy as Methodology, and Design Thinking used interlacing data collection and analysis approaches that helped to more thoroughly cover multiple points of interest with the same data. Each of these methods has been chosen so that the rich physical content, sometimes fondly referred to as the *stuff* of art classrooms (Waltz, 2011, p. 45), can be intricately studied through a methodological approach that will move data from the chaos and disorder of a dynamic, sometimes untended environment, to an ordered, sculptural representation of a case that has been built to stand secure through careful negotiation and the balance of all its diverse parts.

Multiple Case Study Framework

The multiple-case study method was used as the leading research protocol for this research project (Yin, 2009, p. 62). Units of analysis for each case were, first, the "dedicated" studio art classroom and, second, the art teacher who oversees its use

(p. 31). Because art classrooms are known to be filled with activity and are dynamic, nuanced spaces in most schools, it was vital to observe them on-site to capture as much data as possible from these uniquely complex environments. Yin explains that "the case study method allows investigators to retain the holistic and meaningful characteristics of real-life events … including … school performance" (p. 4), and that a multiple-case study is typically considered more compelling (p. 52). This study needed to be both. Because the intent of the study was primarily to gain insight into real-life events as they occur within and are impacted by the physical spaces of contemporary studio art classrooms in U.S. schools, a multiple-case study of 18 schools' art rooms from three different geographic regions was undertaken. A comprehensive set of data was collected through one-day on-site visits to each school, with the completion of all 18 site visits having taken place over the course of one year.

From the outset of this project, I knew that in order to reach a "high degree of certainty" (Yin, 2009, p. 58) as a result of this study, I had to visit a large enough sampling of art classrooms that the resulting data would yield sufficient information to address the gaps between the generalized assumptions often made about art classrooms' conditions, and the actuality of what is being experienced as a result of the current conditions of the physical learning environment within a large selection of art classrooms on any given day around the country. To observe and study even three to six schools, further constrained within only one geographic region, would provide limited perspective on problems that I suspected would reach across regions, and school types. Governing policies, educational goals, and community priorities differ across the nation's schools, and thus, a lesser number of cases would potentially be prejudiced by the unique configurations embedded within a given region, and any associated stereotypes and assumptions could inadvertently render the data ineffective. While it is not recommended to undertake such a large grouping of cases (Amboise & Audet, 2001), as this study did, the purpose in doing so was to gain a more extensive understanding of

how the *design* and *arrangement* of the studio art classroom impacts learning and

flourishing across a multiplicity of schools, not how regional politics, governing policies,

personalities, budgets, or even grade-level divisions or public schools versus private

schools do. By including several schools that cover more than one of each of these

variable characteristics, rival explanations or hypotheses for the current physical state of

the participant studio art classrooms were raised and addressed in order to ensure the

accuracy of the outcomes of the study (Yin, 2009, p. 133).

Goldsworthy's Process as a Methodological Approach for Research

In *Art Practice as Research*, Graeme Sullivan (2004) argues that "visual research

methods can be grounded within the practices of the studio and that these are robust

enough to satisfy rigorous institutional demands" (p. xiii). As a research project

undertaken by an artist and art educator, this study sought to engage a new method of

inquiry by assuming the investigative stance modeled by the artist Andy Goldsworthy in

his conversations about his studio practice with the work of creating natural sculptures in

the DVD, *Rivers and Tides* (Riedelsheimer, 2004), and in his book *Time*, which

demonstrates his documentation methods (Goldsworthy, 2000). Sullivan (2004)

suggests that "those who promote arts based educational inquiry see the arts as

comprising a set of practices that helps broaden the way we understand things and thus

can be used to expand how information is gathered and represented" (p. xiii).

Throughout *Rivers and Tides*, Goldsworthy speaks of his desire to understand … the

characteristic nature of an object, the subtle distinctions found in a natural environment

and within the objects he finds there, the unexpected discovery that brings delight, and

even the frustration of felled sculptures that, upon consideration of "what went wrong,"

imparts new knowledge (Riedelsheimer, 2004).

As this study examined art learning environments, it seemed wise to wonder about

and engage with the data in a manner similar to Goldsworthy's. His approach models a

method that seeks to understand and to know an object or place or relationship, and each one in relationship to the other. That is exactly what this study sought to accomplish. To glean from an old adage, some people see the forest, some see the trees, but Goldsworthy models focusing on the leaves, or other elements on the forest floor as a way of seeing (Figure 3.1). He looks for the small elements of the landscape, such as leaves and twigs and stones, and he pulls them from their obscurity, examines them, and sheds light on their contribution to forest life by rearranging them and creating a new way of seeing them.
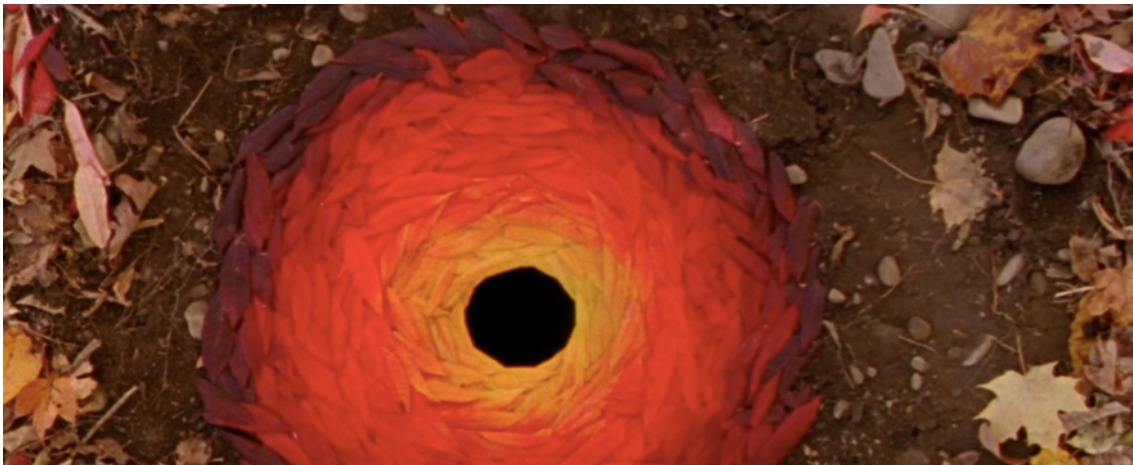
Figure 3.1. Screenshot, *Rivers and Tides* (Riedelsheimer, 2004), leaves—from obscurity, to rearrangement, to seeing anew.

While the multi-case study method structures the research of this study, using Goldsworthy's process helped me get at the essence of what this research questions about the studio spaces that I observed. His process is, as I see it, a research process. He might, at first glance, be an artist who constructs stunning environmental sculptures from stones and twigs and leaves, but I see a research process taking place when I watch him work in *Rivers and Tides* (Riedelsheimer, 2004). His first procedural approach, much like my own, is that when he enters a place, he spends "a lot of time walking around just getting to know the place" (Scene 10). After he observes and

discovers a little bit about the space, he goes about the work of collecting data, in the

form of leaves or twigs or stones, in order to know and understand each one better. He

analyzes what he finds and then uses what he has learned to construct new knowledge

or new ways of seeing the data. As each initial attempt to build turns to frustrating

collapse, Goldsworthy sees an opportunity to learn and to understand more. On one

such occasion in *Rivers and Tides*, he says of the collapse, "This is the fourth time it has

fallen, and each time, I have gotten to know the stone a little bit more. And it got higher

each time. So, it grew in proportion to my understanding of the stone. And that is really

one of the things my art is trying to do … it is trying to understand the stone,"

(Riedelsheimer, 2004). His work with the material is intimate. His understanding of the

stone with which he builds cairn structures (Figure 3.2) seems far more intimate than

most others' would be. He knows and has grown to understand the characteristic nature

of the elements with which he works most often, especially those near his home in

Scotland, yet he describes his process as one in which he is constantly learning and

building new knowledge, even from those objects and circumstances with which he is

intimately familiar.

Figure 3.2. Screenshot, *Rivers and Tides* (Riedelsheimer, 2004), stone cairn.

I find a kindred connection to his process. He seeks to know and understand his natural studio as intimately as I seek to know and understand the K-12 studio art classroom. Similarly, as he seeks to know the stone better through his artmaking, I have undertaken this research to simply try to know and understand the studio art classroom sink and other features natural to the space, along with their properties, uses, and possibilities.

Design Thinking

Design Thinking is already a proven research method in the industrial arts and consumer product design fields but, as far as I can find, has not been applied as a scholarly methodological approach to research projects such as this one. As a way of engaging with human needs and product development, Design Thinking was a concept that began to percolate in the mid-to-late-20th century. Herbert A. Simon (1996) was an early contributor to the notion of using a variety of experts to tackle consumer-related product design. More recently, Design Thinking has made its way into educational conversations through the maker movement, S.T.E.A.M. and S.T.E.M. programs, and even in the classrooms of some of my art education colleagues, who have begun to use it in their curricular units of study. Additionally, when I attended the annual NAEA Conference in March of 2017, there were several presentations on the topic of teaching Design Thinking skills in art education curricula.

In 2015, when I first started working out the methodological application of Design Thinking to this study, I had not yet begun to hear of the above-mentioned trend to bring its problem-solving skills into the classrooms as a curricular approach to 21st century learning styles. But it seemed appropriate to consider this arts-based way of taking in, processing, and synthesizing information as a methodological approach to gathering, treating, and analyzing data for this study—a study on the art room, which, in one sense, is full of furniture, products, and consumer goods and has a variety of room function

issues that need to be understood before they can be addressed or potentially resolved. Ultimately, when Design Thinking's total process is in place, resolution to existent problems is the objective. Thus, utilizing the first two stages as a part of this research methodology—"intelligence gathering" and "defining the problem" (Simon, 1996)—sets the stage for the findings of the study to offer useful information that product designers can use to complete the Design Thinking circle, or continuum, and potentially resolve some or many of the issues this study has been able to understand and define more clearly.

A Google image search of the term "Design Thinking" generated hundreds of stunning graphics, all demonstrating this simple concept with original and innovative illustrations (Figure 3.3). The words found on these illustrations paint a picture of exactly what this research project has attempted to accomplish. Stage one of Design Thinking is explained by words and phrases such as "empathize," "understand," "clarify," "identify," "observe," "discover," "ask and listen," "tell stories," and "gather inspiration." Stage two responds to stage one by seeking to "synthesize and define," "search for meaning," and "frame opportunities" from the emergent data. Specific to this study, all of the data collection devices used, such as classroom observations, checklists, teacher interviews, photographic documentation, and all of the others, had at their core an impetus to accomplish the fundamental purposes of the first stage of design thinking: simply put, "intelligence gathering." Analysis of the findings has produced insight (meaning) and "defined" several of the specific problems that were found in the 18 studio art classrooms included in the study.
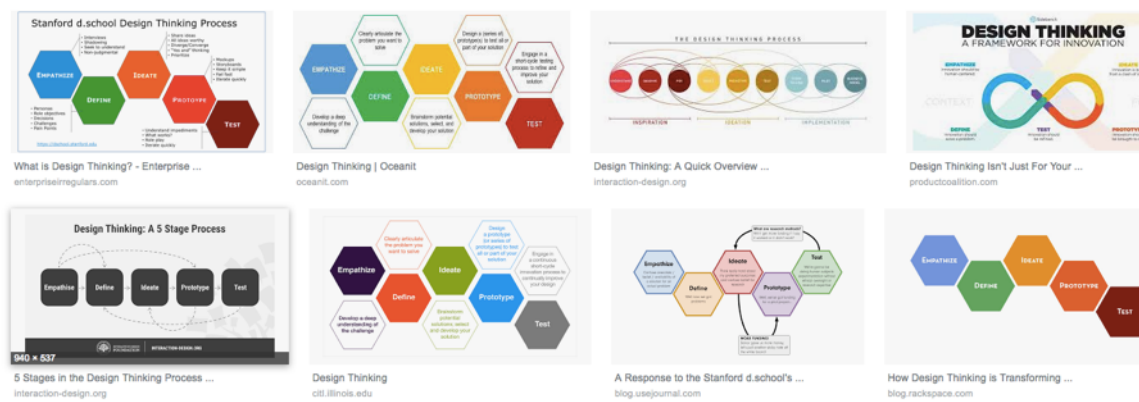
Figure 3.3. Screenshot, Google image search for "Design Thinking."

The Data

An informed consent form was created for both the art teacher and a school administrator for each site. After the consent form was signed on the day of my visit to the classroom, I went through a series of steps that produced the data necessary to conduct this study. I will describe the actions taken by me, the researcher, on the day of each site visit in the data collection section of this chapter. The data collected at each site included four of the four types that Yin (2009) identifies as "most commonly used," namely, documentation (detailed photographs, field notes, and floor plans), direct observations, audio-recorded interviews, and archival records (p. 101). Additionally, a checklist of art classroom design features and provisions was created based on the NAEA's *Design Standards* for School Art Facilities publication (2015), with the purpose of uniformly recording and collecting information about the presence and condition of each specific feature of the classroom recommended by the NAEA classroom design committee.

Confidentiality and Privacy

In order to protect the anonymity of the school site and the participant teacher, the only document that associates the school's name and the teacher's identity to the site

number labeling it for this research is stored on my password protected laptop. Both the school and participant art teacher have been assigned the same number correlated with the sequential order in which their site observation occurred. Therefore, "Site 1" and "Site 1's teacher" are the designated pseudonyms for the school and teacher associated with the first site I visited, and Site 16 and Site 16's teacher are the designated pseudonyms for the school and teacher associated with the 16th site I visited. With a total of 18 schools, the sites are numbered from 1 to 18 and are referred to throughout the reporting of data, data analysis, and subsequent discussions solely by site number. All documentary photographs have been taken using care to ensure that no identifying school names, mascots, or teachers' names are visible. Similarly, the spiral-bound data collection binders were labeled by site number and the date of the site visit.

Checklists

Originally, I created three checklists to record various data on the day of my site visit to each school. As mentioned above, one checklist was created for the purpose of recording the presence and conditions of 117 design features, arranged into 17 categories, as they have been recommended by the NAEA. The NAEA checklists from each site provided some of the most significant data for this study and were reviewed often in order to develop a deeper understanding of the cross-case narrative that would eventually emerge as a result of data analysis.

The remaining two checklists were designed to collect data related to aspects of human flourishing that have been described in the literature included in Chapter II. The two checklists regarding indicators of human flourishing were quickly found to be problematic during the first couple of site visits, and therefore were subsequently removed from the data collection effort. Where indicators of human flourishing appeared evident during class observations, fieldnotes of the indicating event were recorded instead.

Photographs

Extensive photographic documentation of each participant studio art classroom was undertaken, allowing for multiple revisits after the original site visit had ended. Although not all photographs were consistent in capturing certain details from site to site as I had hoped, enough visual data were collected to provide a rich pool of information for analysis of each site and across sites. The nearly 200 photographs documenting each art classroom included in this study provide some of the most meaningful information for this study and were found to be essential to include in Chapter IV's description of the findings. Without the accompanying images, my descriptive words would likely sound over-dramatic and unreliable. The inclusion of the images allows the reader to draw their own conclusions about the various features and overall state of the art classrooms observed.

An additional benefit of documenting the space photographically was the opportunity to review, reflect upon, and seek further understanding after leaving the site. Spending all day collecting data, interviewing the teacher, observing classes, drawing floorplans, and taking photographs, usually left me exhausted. I found that I needed time to rest and decompress before I could review the data. Reviewing the photographs allowed me to regain my connection to the space, to collect my memories of the day spent intently studying each art room and its nuanced details, and eventually to grow in my understanding of all I had seen and heard there.

This is one of the areas in which I feel a kindred experience with Goldsworthy, who has used photographs of his work throughout his career to help him describe, discuss, and seek to understand what he has accomplished in each piece he constructs. He describes the photographs of his work as

> the language through which I talk and describe what I have made. It's also
> the way I understand what I have done. When I've worked all day in the rain
> and I'm tired, I get visually and physically numb to what I've made, and I
> need that time … between the making and the return of the images … to be
> able to see afresh what I've really done, (Riedelsheimer, 2004).

Semi-structured Interviews and Informal Dialog

The interview with the participant art teacher was held inside the studio art classroom in which she spends a great part of her day. This enabled the interview to shift back and forth from the open-ended questions being asked to the situations of space to which the teacher and I are referring throughout the conversations. The interview was audio-recorded and conducted while the teacher and I were sitting, standing, or walking around the space, whatever was most comfortable for the art teacher or suited the conversation. The recorded interview typically started with us sitting at a classroom table, but eventually turned into a classroom exploration. This was a suitable outcome, given the nature of the questions and the purpose of the study.

Additionally, much of the informal discussions that took place throughout the day were not recorded, but these still yielded valuable data that I recorded in the field notes section of the site visit binder. These discussions included casual conversations held during breaks in the class schedule, lunch, and before or after school. For the most part, my site visits tended to prompt a full day of conversations among the participant art teacher, her fellow art teachers, and myself; a conversation that revolved around the physical studio environment, design decisions, and the school building's history. This generated quite a bit of relevant complementary data to what the semi-structured interview produced.

The semi-structured interview was directed mostly by the questions, "What do you like about the space?" and "What do you find to be problematic about the space?" The rest of the interview naturally shaped itself from those questions, with follow-up questions raised in response to individual room situations or in reference to specific NAEA recommendations. In hindsight, I have wondered whether or not I should have tried to craft the questions to address more precise design issues, or to ask the teacher to specify her thoughts on various notions of human flourishing, but I am not sure that directly asking the questions about human flourishing would have been as beneficial or

even as authentic to the research as could be accomplished in subsequent studies that will be able to dig more deeply into those topics.

Due to the large number of participant schools and the already large volume of data collected, follow-up questions or interviews were not sought, particularly after I realized that the additional data collection or clarification of data was not vital to the data analysis or final conclusions.

Setting

The settings for this study are 18 K-12 dedicated general or multi-purpose studio art classrooms, each serving several hundred students per week. The research was conducted in 6 schools in each of three different geographic regions of the United States: the tri-state area in and around New York City, the mid-Atlantic region, and southeast Texas. These three regions were specifically chosen because I have been employed as a professional educator in multiple capacities in each of them and have maintained professional relationships in all three over the years. Thus, I have a working knowledge of the variety of schools and school systems available for consideration in each area and am familiar with the unique region-specific educational cultures that have shaped each school's connection to nationally shared values, as well as the distinctive differences that are evident in the pedagogical and operational practices of each school and school system.

The participant classrooms were those specifically "dedicated" by their schools to house visual arts teaching and learning, as referred to by the most recent studies investigating the state of art education programs in schools (National Center for Educational Statistics, 2002; Office of the New York City Comptroller, 2014). Primary, middle, and high school grade levels were included in as equal portion across participating sites as possible, as were rural, urban, and suburban communities that serve a diverse range of socio-economic households. In the interest of inclusivity, both

public and private school settings were studied. Finally, at the time of the conclusion of the data collection phase, participant schools' building ages ranged from brand new to decades old, with the newest school having been occupied for only one month at the time of the site visit, and the oldest one estimated to have been occupied at least 80 years.

In terms of reaching the goals for observing in a variety of school settings, the aim was to include two-thirds of the schools in each geographic region from the public sector, with the remaining one-third from the private sector. Similarly, the aim for each region was to include two elementary, two middle, and two high school classrooms. It was not always possible to meet those goals, although every reasonable effort was made to do so.

The above-described configuration of participating schools was designed to gather information on a large cross-section of art classrooms across a variable range of school settings in order to produce a more robust and comprehensive picture of what studio art classrooms look like, and what conditions they are in, across the nation (Herriott & Firestone, 1983). The differences in settings allowed for "maximum variation" and assisted in identifying "important common patterns" across the multiple-case group of participant schools (Creswell, 2007, p. 127).

Defining the Participants

Anne Marie Hubbard Waltz (2011), whose dissertation addresses three art teachers' relationships to the *stuff* in their classrooms, states in a section related to the Reggio Emilia school model that "spaces are recognized as co-teachers. This makes them worthy of investigating to see how they function," (p. 50). In keeping with the idea that investigating classroom spaces is a worthwhile endeavor, given their significant role in the learning process, for the purposes of this study, each dedicated space or classroom itself is identified as a co-participant. Studio art classrooms are unique spaces

that house a variety of objects, tools, equipment, and consumable materials in schools. The teachers who manage and teach in these spaces are rarely the only informants to their design and arrangement, with the classroom itself visually and historically offering up as much information about its design and ongoing functionality as the teacher who presently teaches in the space. Not infrequently, a teacher inherits a space that is already in a state of organic evolution.

Depending on what is there when she begins her teaching assignment in a particular classroom, and how much time she has in her teaching day to dedicate to an investigation of what exactly she has inherited in this space, it can take years to cull through all of the *stuff* that has taken up residence there. For example, I once inherited a classroom that, after a few months, I discovered still stored unfinished 8th grade art projects from a group of students that were in their first year of college that September. The classroom also held a small broken kiln that someone had donated, a large amount of art materials in various states of usefulness, and an entire side room filled from floor to ceiling with hundreds, if not thousands, of glass jars, cardboard tubes, plastic bowls, and other recyclables. Some of these items were treasures, and others were simply taking up much-needed space. Such is an example of the historical encumbrances an art teacher must work through, even as she endeavors to set and reach curricular goals, order new materials as needed, and perform all of the other day-to-day tasks assigned to her by the school. In another scenario, as often happens as well, a dedicated studio art space is shared among a group of teachers, and its care and oversight is delicately (or not so delicately) balanced between two or more faculty members. In this case, the classroom itself might reveal more information than a teacher is able to disclose under these circumstances. Lastly, a classroom might be best served and identified as a participant because it is the other independent factor, separate from the individual teacher, that is statistically acknowledged and accounted for as a yardstick measuring a

school's arts education standard of quality in the aforementioned studies (National Center for Educational Statistics, 2002; Office of the New York City Comptroller, 2014).

The classroom's co-participant in this study was the full-time certified art teacher that oversees pedagogical and logistical happenings that take place in the studio art classrooms described above. These teachers served as informants to the daily processes that occur in the studio space during the course of any school day and in support of the learning goals and human presence involved in the use of the space. Their expertise in how the classroom design and arrangement influence the activities engaged in, and the people who inhabit the space, was vital to understanding many of the nuances and distinctions particular to each individual art room included in this study. In my work with these art teachers, I attempted to mimic Andy Goldsworthy's work alongside the "wallers" that have helped him build stone walls like the one he designed for Storm King, an open-air museum in Upstate New York. He describes the relationship between himself and the "waller" and defines what their roles are in the shared work of creating something worthwhile:

> I learned that I have to respect their work, their life; you know when I work with a waller, it's not just the time they spend with me, but they bring their lives to it. They don't want me to touch the walls, playing at being a waller … we both have our roles in this, and my role is to find the line of the wall. I work the space. Their dialog with the stone is what makes the wall, (Riedelsheimer, 2004).

Figure 3.4. Screenshot, *Rivers and Tides* (Riedelsheimer, 2004), the wall at Storm King.

My role in this research project was to find the line of where the classroom as a physical space was currently located on a continuum of design standards offered by the NAEA and to consider where the line might shift in order to better support learning, making, and senses of well-being. But, like Goldsworthy's work with the "wallers," my one-day visit, filled with the purpose of understanding the bigger picture of studio art classrooms across a number of cases, could not be done without the help of those who spend every day in relationship with the work of teaching children art there.

Thus, it was important to the process of this research that I respect their work and the spaces in which they work. In that regard we are, all three, participants in creating a new understanding and, hopefully, new knowledge about the role of the art classroom in the creative endeavors of art teachers and their students.

Participant Selection

My original goal was to find willing participant art teachers through professional contacts that I had within the tri-state area surrounding New York City, the Hampton Roads area of Virginia, and the Houston area in southeast Texas. I was looking for a variety of school settings, as mentioned above, but I wanted the sampling of schools to be as random as possible. I did not want to handpick school settings to fit a pre-determined narrative, so I reached out to my contacts and school districts within each region and let the sample group emerge from recommendations and those who were agreeable to taking part in the study. As long as the school/teacher/classroom was willing, their schedule worked with mine, and the demographics fit well enough into the variability factors as described above, I included them in the group of participant schools.

One thing I did not anticipate was the difficulty of undertaking research in public and private schools in the Hampton Roads area of Virginia. Having lived and worked there for over ten years, I had a large number of contacts in several contexts, including a board member in one district, a vice-principal of a school and a teacher who had been a

former principal at one of my prior teaching jobs in another district, a teacher friend in a high school in a third district, and other connections with a variety of educators in local private schools. What I discovered, though, was that each of the public school districts required a lengthy process of completing a research application, with at least one district allowing for participant teachers to be chosen only from a list of those pre-approved to participate in research projects. In addition, with the exception of one private school contact, I did not hear back from several that I called. Given these limitations, I ended up applying for research approval in one public school district in that area, where I was then, by word of mouth, able to recruit three teachers and their classrooms. I had already received approval a year earlier to include an independent private school from the area, which meant that I was able to secure four participant schools in total in southeast Virginia. I then reached out to a colleague in the Baltimore area, where she was able to help me secure two additional public schools. Thus, I broadened the boundaries of the geographic region of southeast Virginia to include the wider mid-Atlantic region and ended up with five public school participants and one private.

Ultimately, the 18 schools included in the final sample set for this study offer a rich variety of school types and grade divisions, educational cultures, community environments, ranges of support for the arts, budget provisions, building ages, and more. If I had tried to coerce the sample set to fit a pre-determined narrative, the study would have lost the benefit of what became the serendipitously gathered group of participant teachers and studio art classrooms that are now counted as Sites 1 through 18.

The 18 Participant Schools

Table 3.1 Participant Site Details

Demographics and Characteristics Makeup of Participant Schools							
Site**	Type	SES*	Communit	Focus	Location	Bldg Age	Gr Level
1	Private	Mid/**High**	Urban		North East-NY	~5	Elem
2	Private	Middle	Suburban		Southeast TX	20+	Elem
3	Private	Mid/High	Urban/Sub		Southeast TX	~20	M.S/H.S.
4	Public	**Low**/Mid	Suburban		Southeast TX	30+	M.S.
5	Public	Low/Mid	Suburban		Southeast TX	50+	Elem
6	Public	Middle	Suburban		Southeast TX	~5	H.S.
7	Public	L/M/H	Urban	Spec Needs	North East-NY	~10	Elem
8	Public	Low/Mid	Urban		North East-NY	~10	K8
9	Public	Mid/**High**	Suburban		North East-CT	20+	H.S.
10	Public	Low/Mid	Urban		North East-NY	80+	Elem
11	Private	Mid/High	Suburban		Southeast TX	20+	M.S.
12	Private	Mid/High	*Rural*		MidAtlantic-VA	20+	H.S.
13	Public	Low/Mid	Suburban		MidAtlantic-VA	30+	H.S.
14	Public	Low/Mid	Suburban		MidAtlantic-VA	20+	Elem
15	Public	**Low**/Mid	Urban	Arts	MidAtlantic-MD	40+	H.S.
16	Public	**Low**/Mid	Urban	Arts	MidAtlantic-MD	-5	M.S.
17	Public	**Low**/Mid	Urban	Charter	North East-NY	-5	K8
18	Public	L/M/H	Suburban	Arts	MidAtlantic-VA	-1	Elem

*Sites are named as numbered for the purposes of this study: chronologically by date of visit, based on the order of contacts made, participation approvals obtained, and site visits scheduled and conducted. Thus, Site 1 is the first school visited and Site 18 is the last.

**SES=Socioeconomic Status range of the student body. (Most participant schools serve more than one demographic. Where one socioeconomic grouping is comparatively predominant among students, it appears in boldface on the chart.)

Data Collection and Analysis

Data Collection

    Conducting the site visits. In preparation for conducting consistent site visits at all 18 participant schools, I created 18 numbered pouches with coordinating numbered spiral-bound field note books, informed consent documents for teacher and administrator signatures, and 1 digital camera 2-gigabyte SD memory card per site. Each spiral-bound field note book contained these sections, as approved by the IRB process: (1) School

demographic and historical data information, (2) NAEA Standards Checklist, (3) Human Flourishing Indicators Checklist, (4) Parker Palmer's Six Tensions Checklist, (5) Ten blank field notes pages, and (6) Five blank sketch pages.

In addition, for the duration of the data collection period, I prepared a second larger "go" pouch that was taken, along with the site-specific data collection documentation pouches, to each site on the day of my visit. The tool pouch was equipped with the following: (1) one DSLR "point-and-shoot" camera with case, (2) two fully charged camera batteries, (3) one camera battery charger, (4) one 25' measuring tape, (5) one laser square footage measurement device, (6) one black permanent marker, and (7) two ballpoint ink pens.

Each site visit was conducted as consistently as possible with these actions:

1. Sign in at the school and meet the teacher.

2. Brief informal introduction to the classroom by the teacher.

3. Typically, as the teacher began preparing for her school day, I would walk around the space, getting to know the "lay of the land" and seeking to "understand" or get a feel for the landscape of the room.

4. Often, the teacher and I would continue informal dialog about the room and her preparations for a typical day in the art room.

5. Depending on the class schedule for the day, I began moving throughout the space, looking through cabinets and drawers, closets, and storage units, and would eventually begin taking photographs of all areas of the room including wide-angle shots of each classroom and the insides of all cabinets, drawers, closets, corners, storage units, educator offices, and adjacent storage areas. As much as possible, I also took photographs of items known to be included in the NAEA *Design Standards*, including sinks and sink areas, furnishings such as tables and chairs, technology, safety and hazardous materials

equipment, etc. In order to avoid taking photographs of students, I only took photographs of the space and its details when classes were not in session.

6. Whenever possible—during planning bells, class sessions, or lunch periods—I completed the NAEA checklist on my own, asking for clarification on a design feature from the teacher whenever I could not find the answer on my own.

7. I observed at least three classes in session and took field notes on various aspects of the operational procedures, room function and use, teacher approaches, student access, traffic flow, etc.

8. During the day, I also sketched a quick floor plan of the room's arrangement.

9. At the teacher's convenience, usually during a planning bell or after school, I conducted an audio-recorded interview with the teacher.

10. Throughout the day, informal dialog with the teacher was recorded in my field notes, while at times, casual comments that were not able to be recorded were recollected and able to be confirmed by corresponding photographs or the teacher interviews.

Data Treatment

NAEA checklists treatment. The NAEA checklists cover 117 unique feature recommendations organized into 17 specific categories (sinks, storage types, furnishings, etc.). With 18 sites included in this study, the amount of data produced by the NAEA checklists alone needed to be organized and arranged in preparation for both single-case and cross-case analysis. It was determined that organizing the data into an Excel spreadsheet so that each site's data could be viewed vertically, with data from all 18 sites organized horizontally by feature recommendation to enhance cross-case

analysis (see Figure 3.4 for a partial image of the spreadsheet and see Appendix D for the whole document). As also can be seen at the bottom of Figure 3.4, in order to be able to focus on analysis of each NAEA recommendation category, such as "Location of Art Rooms" or "Universal Design," separate worksheets for all 17 categories were created within the Excel document.

	A	B	C	D	E	F	G	H
1	UNIVERSAL DESIGN	1	2	3	4	5	6	7
2	Barrier free	P/U	N	Y/we	N/P	N/P	Y	N
3	Accessible to all students	P/U	N.Ob	Y	N/P	Y/we	Y	N /we
4	Adaptive technology	P/U	Y/P	Y/we	U	Y/we	Y/we	U
5	Aesthetic design	Y	N	Y/we	Y/P	N	P	P
6	Flexible arrangement	P	Y/P	P	P	N/we	N	P
7	SPACE	1	2	3	4	5	6	7
8	Minimum 55 sq ft per student	594/660	421/825	1095/770	712/2255	767/1100	1140/1650	292/550
9	Student to teacher ratio 1:20 or 1:25	1:12	1:15	1:14	1:29-1:41	1:15	1:25-30	1:10
10	Minimum 400 sq ft lockable storage room connected to the classroom	100	~50	~600	~400	~300	~205	~50
11	Adequate in-class storage, accessible to students	Y/we	N/we	Y/we	P/N	N	Y	N (we)
12	LOCATION OF ART ROOMS	1	2	3	4	5	6	7
13	Entrance door larger than the usual classroom door	P	N	N	N	N	N	Y (we)
14	First floor preferred to accommodate supply and equipment delivery and movement	N	N	N	Y	Y	Y	Y
15	Access to outdoor spaces is ideal	N/we	N	N/we	N/we	N	N/we	N (we)
16	Easy access to restrooms and water fountains, esp for elementary students	Y	Y	P	Y	P	Y	Y
17	Close proximity to additional art rooms and other fine arts spaces is preferred	Y/we	N	N	N	N	Y	Y
18	Easy access to technology	Y	Y/P	Y	P	P	Y/we	Y
19	Centralized location to aid in cross curricular collaboration	N/we	N	N	P	N	Y	Y
20	PATIO AND OUTDOOR SPACES	1	2	3	4	5	6	7

Overall Data | Universal Design | Space | Location of Art Rooms | Patio and Outdoor Spaces | Office and Work Station | Basic Furnishings | Walls and Floor

Figure 3.5. Screenshot, NAEA design standards data analysis chart.

Photo documentation treatment. Each site visit resulted in a site-specific digital camera memory card with at least 150 photographs documenting the overall room situation, the location and condition of any NAEA recommended features found in the space, furnishings placement, and detail images of the inside of each cabinet, drawer, corner space, office space, kiln room, and closet or storage room. After each site visit, the photographs were uploaded to my desktop and laptop computers and stored separately by site number.

Transcription treatment. Due to the large number of interviews and the mounting expense of transcribing over 600 minutes of interviews, the first nine interviews were transcribed over the course of several weeks by an online transcription service, Transcription Puppy, and double checked for accuracy by me, the researcher. At the midway point of working through having all of the interviews transcribed, three things

happened: (1) As I reviewed the first nine transcriptions for accuracy, I discovered a number of errors that made me uncomfortable with using the transcription service for the remaining nine interviews; (2) I realized that the data that were emerging from the first nine interviews were not nearly as rich with information as the photographs and NAEA checklists were proving to be; and (3) as a result of the first two points here, I determined that the financial investment for transcription of the last nine interviews by an online service would not be cost-effective. At that point, I decided to listen to the remaining nine interviews and take annotated notes with timestamps for specific areas of interest that had already emerged through data analysis of the NAEA checklists and photographs for each site. Examples of those emergent areas of interest from both the transcribed interviews and those that were notated rather than fully transcribed were related to technology, outdoor learning spaces, teachers' feelings about various features in the space, situations of "making do" as described by the teacher, known history of the art room, room organization and management strategies, and design and arrangement descriptions.

Additional documentation treatment. All interview transcriptions, field note transcriptions, and analysis documents have been stored on my laptop in site-specific folders. In addition, all site visit packets have been maintained as they were on the day of my visit and reviewed as necessary during analysis. Thus, the data collection binders—including floorplan sketches, general school and teacher history, informed consent documents, school brochures, and camera memory card—are stored in my home in the original packet organized for each separate site.

Data Analysis

Single- and multi-case analysis. After the NAEA checklists were transcribed into an Excel worksheet, with vertical columns telling the overall "story" of the individual site, and the horizontal rows indicating cross-case relationships of NAEA *Design Standards*,

the first level of analysis was to briefly treat the data for single-case analysis to aid in

building an understanding related to the nuances and distinctions found in each studio

space as it has been guided by the management of a unique and skilled educator.

Photographs and the semi-structured interviews were also reviewed and analyzed for

the purpose of understanding each site's distinctive nature and to revisit the space and

its nuanced design-related situations. Although the single-case analysis has not been

included in the report of findings in this dissertation, to have not gone through the

process of analyzing each site's particularities, including, but not limited to, the specific

problems related to the NAEA recommendations, the cross-case analysis would have

lacked the ability to recognize and account for the complexities that emerged at each

site through both data collection and analysis.

The single-case analysis produced a portrait of each of the unique stories of all 18

sites included in this study. From the outset of the research, however, I knew that the

cross-case analysis had to be the primary focus, in terms of outcome, because a cross-

case comparison would yield stronger and, most likely, more compelling findings;

findings that would confirm my thesis that, even with all of the nuanced complexities

found at each individual site, there would be common threads across schools in design

and space provision issues. In many conversations with art teachers and other

colleagues in the field of art education over the years, I have found that school-specific

design issues are often blamed on a variety of things other than the design and

arrangement of the space. Thus, each school's narrative tends to distract from looking

outward, to a collective body of evidence that suggests that the pattern of one school

actually matches the pattern of many schools.

Yin (2009) describes the multi-case study as having an ultimate objective of cross-

case comparisons (p. 156), pattern matching (p. 136), and explanation building of

emergent themes (p. 141), with a consensus of information gathered so that conclusions

could be constructed (p. 156). Thus, after the individual case analysis was conducted for

each site, a cross-case analysis was conducted, beginning with the Excel worksheet. Almost immediately, certain patterns began to be matched across sites. These patterns were color-coded and included these four emergent themes: (1) features that were not visibly traceable across sites (for example, accessibility and egress protocols, lighting conditions, acoustics treatments, safety measures like fire coded doors, etc.); (2) NAEA features that required subjective measurement (specifically, the terms "adequate," "appropriate," "enough," or "suitable"), (3) NAEA features that were lacking in provision across sites, and (4) NAEA features that were consistently addressed or found present across sites. Further coding began to indicate both similarities and variability in patterns in the areas of technology, educator offices, space allotment, ventilation and hazardous materials storage, among others that will be described in Chapter IV.

The emergent themes and patterns, at this point, were producing a consensus of rich and broad potential conclusions, but in order to get to the essence, not only of the problems identified, but to the needs of students and teachers in the studio art classroom, the additional methodological analyses of Goldsworthy as Methodology and Design Thinking were pursued in order to dig a bit deeper into the data and the initial cross-case conclusions.

"Goldsworthy as Methodology." Goldsworthy as Methodology served as a model of analysis for unearthing and revealing patterns, similarities, and even differences among the collection of data that has been left untouched and buried beneath the stacks and stacks of *stuff* found in the art rooms included in this study. I attempted to structure a thoughtful and aesthetic response to how the data and emerging patterns might fit together in a new way of ordering; structuring it to be balanced and independent, and viewing what might otherwise go undiscovered if left on the "forest floor" of an unexplored art classroom. One of the most significant aspects of Goldsworthy's process is the fact that, without his interest, discovery, and intervention, the variety of leaves, twigs, bracken, stones, and other objects would remain untouched

or buried under layers of other objects. It is not that he tries to abruptly change or

overhaul the environment in which he works his thoughtful process; it is more that he

walks into the space and seeks to discover all of the interesting elements that might be

found there and arrange them in new and noteworthy patterns that ultimately make us

more aware of their fascinating and specific characteristics (Figure 3.6).

Figure 3.6. Screenshot, *Rivers and Tides* (Riedelsheimer, 2004), Goldsworthy working.

In the same way, I endeavored to know more about the singular and collective

objects found within the landscape of the studio art classroom. I entered the space, at

first walking around seeking to get to know the place, observing those who inhabit the

space, getting a sense of the who's and what's that interact there, and eventually began

to peel back the layers of objects natural to the environment. Where Goldsworthy seeks

to understand the stone, I sought to understand the sink. Where he seeks to understand

the twig, I sought to understand the storage systems. Where he seeks to understand the

bracken, I sought to understand the use of technology. At one point, I began to

understand that I had to limit the discussion to the most compelling data, so I began

sifting through what I had collected and chose data that stood out from the rest as

germane and particularly rousing, in terms of what captured the essence of what is

currently happening in the case of the 18 studio classrooms examined in this research.

Ultimately, nine of the NAEA *Design Standard's* features stood out as salient themes,

along with two others that emerged from the data.

Then I began to build the structure of the case in a manner similar to that of

Goldsworthy when he builds a cairn or other environmental sculpture. In essence,

Goldsworthy inquires through working closely with objects in order to understand them

better. He then he seeks to use that knowledge to create new knowledge that is

informed by what he has learned from the success or failure of his understanding. He

weighs one stone against another (see Figure 3.7) in order to build a structure that, in

whole, is built as the inclusion of one object stabilizes the other—the final result being a

finished sculptural work (Figure 3.8) that strikes the viewer with wonder as they see,

maybe for the first time, ways of organizing objects and features of an environment that

had been previously hidden or misunderstood.

Figure 3.7. Screenshot, *Rivers and Tides* (Riedelsheimer, 2004), Goldsworthy working.

Figure 3.8. Screenshot, *Rivers and Tides*(Riedelsheimer, 2004), the final piece is added.

This study has attempted to do the same in the context of the *stuff* of the art room,

whether they be fixed or fluid objects, or identified as NAEA recommendations or

otherwise. And while the resulting cross-case analysis is not presented in the form of a

visually stunning structure like Goldsworthy's cairns and other environmental sculptures,

my hope is that the outcome of the gathering of this collection of findings *is* striking and

similarly allows the reader to see the landscape of the art room with fresh eyes; seeing,

possibly for the first time, what has often been previously misunderstood about design

and arrangement issues in U.S. studio art classrooms, as witnessed through the

dynamic organization of data brought to life by the 18 classrooms included in this study.

"Design Thinking." Finally, the third layer of data analysis undertaken for this

study was to use Design Thinking's stages one and two. Stage one, empathizing or

"gathering information" (Simon, 1996), was a natural byproduct of the data collection

phase, namely, through the NAEA Excel spreadsheet and the interviews with the

teachers. Stage two allowed, then, for a teasing out of the internal patterns of the data,

leading to a number of problems being able to be "defined" (Simon, 1996). "Information

gathering" and "defining the problem" are essential components of Design Thinking and

set the stage for a different set of insights to emerge. As will be discussed in the context

of implications in Chapter VI, stages three, four, and five attempt to address the now

defined problems with possible resolution through idea generation, prototyping, and

testing (Simon, 1996). Thus, this dissertation attempts to recognize and define certain

problems in the studio art classroom in order to make that information available to school

architects, facilities personnel, school administrators, and art teachers, ultimately, for the

potential benefit of students' creative efforts. Utilizing Design Thinking's arts-based

product design processes as a methodological approach in researching the art rooms

included in this study may allow for a natural progression from the findings of this study

into the development of products and studio design decisions that might eventually

increase student and teacher flourishing in the midst of their future creative endeavors.

Limits of Research

Because there are multiple pedagogical approaches to the teaching of art, this

study did not attempt to structure its inquiry around specific differentiations in curricular

methodologies. While some approaches to art education learning might support nuanced

preferences regarding studio art classroom organization—for example, Choice-Based

Art Education's arrangement of media-specific centers set up around the room, as

described in *The Learner-Directed Classroom* (Jaquith & Hathaway, 2012)—this study

will presume that a well-designed, well-equipped, multi-media accessible studio art

space will meet the needs of educators who use most of the established curricular and

pedagogical methods, and those yet to be imagined. The particular classrooms included

in this study were general multi-media studio spaces that typically house a wide variety

of art making materials, tools, and equipment that are used intermittently throughout the

course of a school year as they are applied to a broad range of art lessons.

Additionally, this sampling of studio art classrooms was limited to those art

programs that hold classes in specifically dedicated spaces, whether or not those

spaces are or were originally intended for use as art classrooms. It is an unfortunate

truth that there are schools that do not offer art classes at all or that *do* offer art classes,

but without a designated space in which an art teacher might consistently conduct

classes in a curricular-supporting environment. This is another, rather large and complex

set of problems that would be difficult to address in this study. Therefore, while this is of

great interest to me, it is a study for another time.

Sample Size and Triangulation

In order to generalize the data through cross-case comparison, rather than focus

on the individual stories of each case, a larger sample size than is usually recommended

was sought for inclusion in this study. Thus, the number 18 was chosen as enough of a

sample size to offer insight into problems that were suspected to exist across sites,

regardless of community socioeconomics and other demographics, the age of the school

building, the grade levels served, or the personality types of the art teacher and

administrators, along with other potential influencers within specific school cultures. As I

had hoped, the choice of a higher sample number proved fruitful in both the amount of

data it produced and, as a result of that, the ability during the analysis stage to

synthesize the data into a realistic picture of what the design and use issues are as

observed across a variable-rich collective of schools and school types.

Cross-case comparisons were able to be triangulated through use of the NAEA

Design Standards checklists for each site, the detailed photographic documentation that

was revisited and studied in depth after the site visit, and the teachers' perspectives and

description of design and function issues as offered in the semi-structured interviews. As

mentioned in Chapter I, the contributing factors of school socioeconomic status,

educational cultures that are considered more or less supportive of the arts, age of the

building, etc., did not have particular influence on the resulting conclusions after data

analysis. This, in a way, serves as another scaffold to support the reliability of the

research process, given that the studio problems related to the NAEA's recommendations for school art facilities that were discovered through this study were predominantly found to be design, arrangement, and design-related function issues. These results are in agreement with my original thesis that certain curricular, pedagogical, and experiential aspects that effect art learning and making cannot be resolved simply through the provision of a new classroom, more budget allocations, or more school or community-sponsored support for the arts, but rather through intentional and more intuitively-situated design interventions.

Researcher Bias

In the course of undertaking scholarly research, it is important for me to recognize my own biases that have likely influenced the landscape of this study. The following list outlines those biases:

- I am intimately acquainted with the day-to-day life in K-12 studio art classrooms, having spent ten years serving in all grade divisions as an art teacher.
- As an art teacher, I have experienced teaching from an art-on-a-cart situation and from within three dedicated classroom spaces, ranging from very small to moderately sized.
- Over the course of my art teaching career, I learned to navigate administrative and institutional roles, decisions, and systems, all of which offered insight into facilities operations, budget building and implementation, curriculum design, school and classroom improvements, and consumable materials and permanent equipment procurement, among other things.
- I have spent a number of years working with spaces, including art classrooms, in an effort to improve them and make them more hospitable and intuitive to the activities slated to take place there.

- As a part of my educational philosophy, I am deeply committed to students' senses of success and well-being. My prior teaching experiences have influenced my belief that studio art classrooms can be especially suited to foster both.

Ethical Implications

Every effort was made during the course of this research to respect the identity of the teachers and schools, and to be sensitive to the hard work that teachers and their administrators put in every day at their schools, regardless of what the data indicates about design and arrangement problems present in the art rooms at the time of my site visits. As promised to participant schools at the outset of the data collection phase, all photographs of the classroom were taken when students were not present in the space in order to protect their identity and their work product. Throughout the entirety of the study, I have paid careful attention to ensure that ethical procedures were followed in regard to data collection procedures, data treatment and storage, the analysis and discussion of the findings, and in presenting possible implications for the various stakeholders involved in studio art classroom design and arrangement in schools across the U.S.

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Post Research Reflection

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On the Positive

This was an enjoyable research project to undertake, even though it was, at times, exhausting and somewhat expensive, specifically in terms of travel costs and those costs related to the preparation of the site visit packets. It was a pleasure to meet each of the participant teachers and to have the privilege of spending a day observing a number of women and some of their male colleagues as they worked diligently to use

their studio spaces, no matter the physical design conditions, to pass on their love of visual art experiences with the thousands of K-12 students they collectively teach.

In truth, it was somewhat risky to seek to include 18 different sites—a risk that I am thankful my advisor, Dr. Judith Burton, understood was necessary in order to get at the data I knew would be most significant to this study. In the effort to come to a better understanding of current environmental conditions that effect studio art classrooms across a large sample of public and private schools, 18 participant sites from three different geographic regions seemed likely to yield sufficient data to be able to complete a strong cross-case analysis. At the conclusion of the study, I feel my initial inclination to include a larger number of case studies than is typically used in a multi-case study produced the type of information I had hoped for.

In Hindsight

That said, if I could, I would have added another two regions, possibly one in the Midwest and another on the West Coast, in order to broaden the variabilities and data points geographically. I am reasonably certain that the additional two regions would support and strengthen the findings from this study, but I also believe the added data would provide a more comprehensive result. The Northeast, mid-Atlantic, and Southeast Texas regions, however, were more easily accessible in terms of professional contacts and travel logistics, and each region offers enough diversity in school types and cultures, and community demographics for the purposes of this study.

In addition, since the outset of this study, I have grown in my understanding of how to engage with questions of human flourishing and am, at the end of the research process, better equipped to look for its indicators, especially during the data collection stage. While I wanted to look more fully at issues related to human flourishing as a part of this study, I had to take a step back and reframe the study a bit so as not to derail it. Instead, I realized that the data related to the NAEA recommendations were most

significant and essential to eventually understanding how human flourishing in the art classroom intersects with how students and teachers experience the physical environment of the studio space. Thus, in Chapter V, I look at the physical space of the art room through the lens of human flourishing, rather than what I had originally thought possible, which was to collect data in the participant art classrooms on both the NAEA recommendations and indicators of human flourishing. My hope was to analyze their intersections more robustly than this study ultimately could. In the end, I learned to appreciate what this study has become, and not to regret what I had to leave behind.

Chapter Summary

In this chapter, I traced the origin of the impetus for this study, which surfaced as a result of the findings and cross-case analysis of two informal pilot case-studies. Combined, the two cases shed light on the tension between the assumptions that are often made about two polar-opposite classroom settings and the actuality of each one's shared issues as they relate to spatial design and arrangement problems. The discovery of this incongruence led to the conclusion that a multi-case study with a relatively high number of cases might produce a more richly informed understanding of the current state of the physical environment that makes up the studio art classrooms in the U.S. This chapter lays out how the research was accomplished utilizing a layered mixed-methods approach that employed a multi-case study, Goldsworthy as Methodology, and Design Thinking stages one and two. Also included in this chapter is a description of the process that eventually produced the 18 participant school and classroom settings. I explained the data collection process, naming the NAEA *Design Standards for School Art Facilities* as the leading identifier of recommended facilities features for art classrooms. An NAEA *Design Standards* checklist was described as one part of the three-pronged approach to triangulate data, with detailed photographic documentation of

each site and semi-structured educator interviews completing the data collection

components of the study. The rest of the chapter describes how the data was treated in

preparation for analysis, and how cross-case analysis, Goldsworthy as Methodology,

and Design Thinking were used to build a set of conclusions from the data. A reflection

on my personal experience of the research process closes the chapter.

Chapter IV

FINDINGS

Getting to Know the Place

Overview of the Chapter

The National Art Education Association *Design Standards for School Art Facilities* (2015) lays out 17 design specifications for general studio art classrooms for which recommended "standards" of provision are made: universal design, space, location of art rooms, patio and outdoor spaces, art educator's office and work station, basic furnishings, walls and floors, storage construction details, storage types, presentation space, lighting, acoustics, sinks, ventilation, technology, security, and safety. While the narrative describing the specific details of each area is written separately for each grade level group (elementary and secondary), the NAEA recommendations are so similar for both that, for the purposes of this study, I chose to create a checklist that merged the two. Each of the specific areas included for discussion by the NAEA committee, made up of art educators and leaders in the field, is written narratively with descriptions of recommended "design standards." For example, the narrative for "Space" recommends, "The art room should have at least 55 square feet of work space per student (excluding storage and teacher's work space)" (2015).

My research question required data to be collected from site visits to 18 individual schools, located in 3 different geographic regions of the U.S. For this purpose,

I created a checklist derived from the narrative descriptions of the NAEA's *Design Standards*. This checklist included all 17 areas covered by the publication, with a total of 134 specific design suggestions addressed, which are spread in variable numbers across the 17 larger areas of recommendations. For instance, the "Sinks" section includes 12 distinct design or function features recommended for the general multi-purpose studio art classroom.

While data were collected from all 18 participant schools in each of the 17 areas laid out by the NAEA *Design Standards*, this chapter will focus on 9 that, through analysis, were found to be the most problematic and impactful to the daily "life in the art room" experience of teachers and students. Thus, this chapter will discuss, at some length, space allotment, universal design, furnishings, technology, storage, sinks, ventilation and safety, teacher offices and work spaces, and outdoor and patio spaces. Three additional areas emerged from the data analysis and will also be described in this chapter: "design gone wrong," materials limitations brought on by space limitations, and management of the studio. This chapter records the breakdown of significant findings from each of the 12 categories listed above.

Space Allotment

The NAEA recommends 55 square feet of classroom space per student, with a student/teacher ratio not to exceed 1 teacher per 25 students. For most schools, this means that the studio art classroom itself should cover approximately 1,375 square feet of space. The NAEA stipulates that this figure is for the classroom itself and does not include the additionally recommended external (but connected) storage areas with a suggested minimum of 400 square feet, and a teacher's office with a minimum of 120 square feet.

In a nutshell, there is a divide in participating sites between what is recommended and what *is* in the category of space allotment, including all three divisions of recommendations: classroom size, external storage, and educator office or workspace. The detailed findings related to the external storage areas and teacher offices will be discussed at length in separate sections of this chapter but are briefly discussed here, specifically regarding how participating sites "measure up" to the recommendations stated above.

External and/or Connected Storage

Only 4 of the 18 schools for this study meet or exceed the recommended 400 square feet of space for an external storage space.[1] Two are at or near 300 square feet, although one is an open side of the classroom that is filled with materials and separate enough from the student work area that I measured and counted it as congruent with the idea of a storage room (Figure 4.1.1). An additional four storage rooms measure 200 square feet, or half of the suggested amount. Seven are less than half the recommended space, with five of those measuring under 50 square feet, or more accurately a negligible amount of closet space or room on a shelf in the teacher's office. Figures 4.1.2 and 4.1.3 offer a visual representation of the size range of storage spaces found in the studio art classrooms in this study. Figure 4.1.2 meets the NAEA's recommended square footage in the form of a separate adjacent storage room, and Figure 4.1.3 is better labeled a closet and is about one eighth of the recommended size for external storage of art materials.

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[1]Site 4 has two storage rooms and one kiln room that total approximately 400 square feet, technically meeting the recommendation by the NAEA for storage space. Comparatively, the classroom itself is only one-third of the recommended square footage given the higher than recommended teacher-to-student ratio of 1:41.

Of note, five of the external storage areas in this study are located in the hallway outside of the classroom—far enough that the teacher loses a line of sight to her students when or if she needs to retrieve something from the space during class (most of these teachers choose not to do that often, but one or two were observed stepping away from their classroom for this purpose during my site visit). The teacher at Site 5 told me, "I wish I could have a door where I could just go straight from my room into the storage area [while classes are in session]" (Interview Data, 2016). Finally, Site 1 has a small storage room that might be considered external to the classroom, located in the rear of the space, but according to the teacher, this space is earmarked for a specific project of a specific grade level each year. As such, it houses those projects for a majority of the year and is not used for storing regular and rotating art materials in the same context as recommended by the NAEA (Figure 4.1.4).

Figure 4.1.1. Site 12 in-room storage area.

Figure 4.1.2. Site 3 adjacent storage room.

Figure 4.1.3. Site 7 storage closet.

Figure 4.1.4. Site 1 special project

storage closet

Educator Office and Workspace

Most participating sites for this study do not have an external but connected

teacher office or workspace. The few that do have them do not quite meet the

recommended square footage for this separate workspace, although three come close.

Site 9's educator office (Figure 4.1.5) measures 336 square feet of space, but this office

is a shared space among eight teachers, so individual space is really only the size of

each teacher's desk—two of which are desks shared by part-time faculty. Site 13 has

the only educator office and workspace, which at 112 square feet comes reasonably

close to meeting the NAEA standard (Figure 4.1.6). Site 10's educator office is not

external to the art room, but instead was built into the space at some point after the

school and room were originally built—not for the sake of being an art teacher's office,

but its past use/s are unclear now. The space does measure 100 square feet, close to

the 120 square feet recommended (Figure 4.1.7).

All of the other art teachers' work or desk areas are located within the studio art

classroom or an adjacent storage space and range in area from 3 square feet to around

80 or 100 square feet. The details of the art educator work and office spaces found at the participant sites will be discussed at length in their own section in this chapter, but it is noteworthy to recognize an unintended outcome that may be particular to the art room when the teacher's "office" ends up being a desk area located inside of the studio space. It is not uncommon for art teachers to collect a variety of art-related *stuff* (and a lot of it) in the interest of their classrooms. Art teachers are also known to want to express themselves in creative and artistic ways—so their desks sometimes become havens of that creative and artistic expression, especially when they are located within sight of their art students. The result, as found in eight of the sites in this study, is that the square footage that becomes the art teacher's "office" can take square footage away from the classroom itself—a space that often is already short of its own recommended square footage. For example, Site 4's classroom is 712 square feet and serves up to 41 students during a class session, which makes it one-third the recommended 2,255 square feet for that many students. The teacher's desk area takes up approximately 60 square feet of that space, making the actual square footage of the classroom more accurately 652 square feet (Figure 4.1.8).

Figure 4.1.5. Site 9 Group office for teachers.
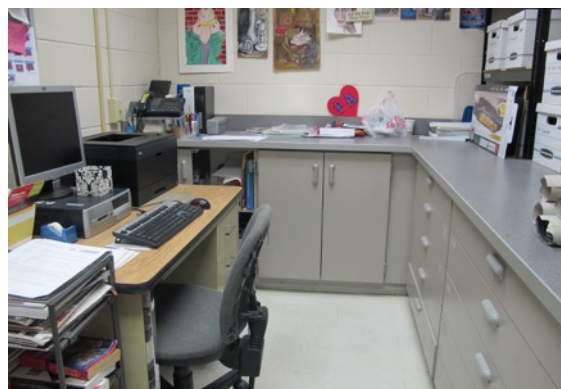
Figure 4.1.6. Site 13 educator's office.

Figure 4.1.7. Site 10 educator office.   Figure 4.1.8. Site 4 teacher desk area.

Classroom Size

When it comes to the classroom sizes represented in this study, several teachers expressed gratefulness that their classrooms are, by comparison, large and spacious, given others that they have either seen or taught in previously. Yet some of those same classrooms fall short of the recommended square footage for the number of students served—specifically, two are approximately one-third of the recommended size, and six are close to one-half of the recommended size. As stated earlier, the NAEA's *Standards* include a recommendation of 55 square feet of classroom space per student served. This number is in line with the National Science Teachers Association's (2014) recommended 50-60 square feet of space per student for science classrooms/science labs. The NSTA's Safety Advisory Board published an article titled *Overcrowding in the Instructional Space* in April 2014 that makes the above square footage recommendations and includes the student-teacher ratio of a maximum 24 students per teacher, also similar to the NAEA's recommendation of 20 or 25 per teacher. The NSTA Safety Advisory Board states that they make these recommendations in order "to ensure a safer and effective science teaching/learning environment."

The studio art classroom has its own set of hazards and effectiveness problems, but in my experience in schools in the past 28 years, the consensus among art teachers seems to be that having a dedicated space large enough to allow for effective egress

and movement about the space has been considered a luxury, rather than a necessity. For example, the participant teacher at Site 4, an art teacher who had served in the district for 3 years at the time of my site visit, expressed that she likes that her space is "big and has lots of natural light." During our interview, she told me that she is grateful for the classroom she has, as she comparatively describes the art classroom at the newest school in the district: "… it's a new school, really, really new. And the classroom is half this size … same amount of kids, half this size." Although I did not have an opportunity to see the newest art classroom in the district to compare the two classrooms' sizes, the measurement of square footage at Site 4 puts its size as approximately one-third the recommended size. Given the NAEA's recommendations of 55 square feet per student, Site 4's art studio should be 2,255 square feet for the maximum 41 students in attendance during one class session, but instead is approximately 712 square feet (Figure 4.1.9). In my experience, to answer Site 4's overcrowding situation by building a studio art classroom of 2,255 square feet to accommodate the 41 students served, would not produce an effective resolution to the problem. Instead, building two art classrooms of approximately 1,100-1,300 square feet, hiring two teachers, and keeping class sizes closer to 20 to 25 students is more in keeping with the specific recommendations that the NAEA cites, both technically and in spirit.

Site 4's numbers related to square footage are not unique among the schools included in this study. Although this dissertation research project falls under the qualitative umbrella, I have collected quantitative data where called for by the NAEA *Design Standards*. I have found it helpful to present the quantitative data related to classroom square footage in order to establish a clear picture of classroom sizes compared to the recommendations of the NAEA, especially given that simply looking at a photograph of an art classroom without students inhabiting the space can be

misleading and makes it difficult to ascertain the true size versus perceived size of the space.

Figure 4.1.9 depicts a visual comparison between the actual square footage of all 18 participating sites and the recommended square footage for the same.
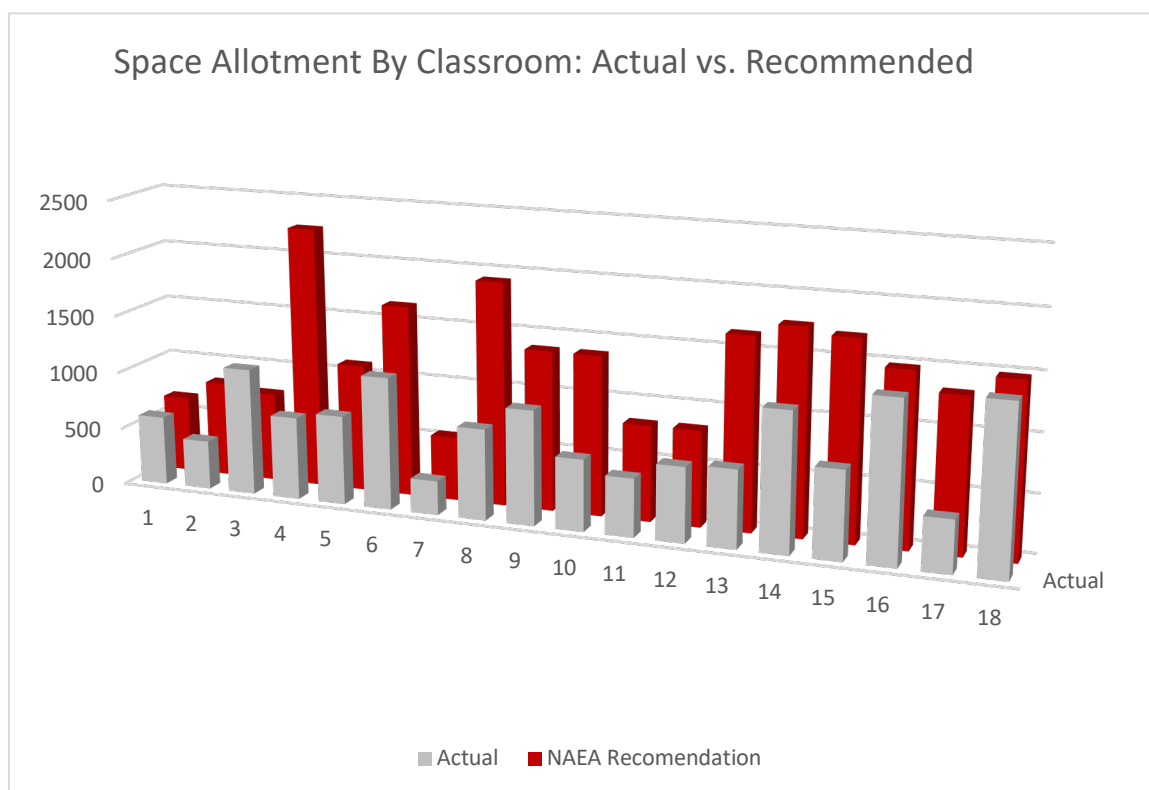
Figure 4.1.9. Space allotment by classroom.

Additionally, Table 4.1 shows how the numbers relate to one another, both within each site and in the relationship of each site in comparison to the others in this study. The first column lists each site number. The second column shows maximum class-size numbers as teachers reported them to me. The third column presents the actual square footage of each studio art classroom as measured and recorded by me using a tool designed for this specific task and, whenever it seemed necessary, double-checked by measuring tape or counting the number of 12-inch tiles from wall to wall. The NAEA recommendation of 55 square feet of space per student was calculated for each site and

is listed in the fourth column. The final column lists the percentage of the recommended

square footage that the classroom meets based on its actual size.

Table 4.1 Actual Square Footage vs. NAEA Recommendation

Site	Max Students Served	Actual	NAEA Recomendation	Percentage of Actual to Recommended
1	12	594	660	90%
2	15	421	825	51%
3	14	1095	770	142%
4	41	712	2255	32%
5	15	767	1100	70%
6	30	1140	1650	69%
7	10	292	550	53%
8	35	782	1925	41%
9	25	984	1375	72%
10	25	614	1375	45%
11	15	500	825	61%
12	15	643	825	78%
13	30	667	1650	40%
14	32	1192	1760	68%
15	31	756	1705	44%
16	33	1373	1485	92%
17	24	450	1320	34%
18	25	1428	1485	96%

Based on the findings of this study, only Site 3 (Figure 4.1.11) exceeded the

recommended square footage. Three other sites come within 200 square feet of the

recommended allotment. Conversely, Sites 4 (Figure 4.1.10) and 17 (Figure 4.1.12), on

the opposite side of the spectrum, are around one-third of the recommended square

footage for the number of students served there, making them part of the eight that are

near or below one-half of the recommended size. The final six are roughly two-thirds

what the NAEA recommends for the number of students served.

Seven schools in this study have class sizes of up to or beyond 30 students;

thus, the recommended square footage for the art classroom may seem quite high. If the

school districts were to reduce class sizes to the recommendation of 20 to 25 students,

as the NAEA recommends, the classroom square footage recommendation would be

1,375 square feet. Figure 4.1.13 (Site 16) demonstrates what a classroom of this size looks like.

Figure 4.1.10. Site 4 at 712 square feet.

Figure 4.1.11. Site 3 at 1095 square feet.

Figure 4.1.12. Site 17 at 450 square feet.
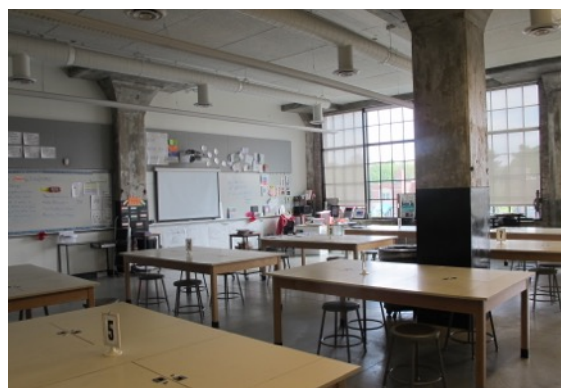
Figure 4.1.13. Site 16 at 1373 square feet.

Universal Design and ADA Compliance

The NAEA recommendations for Universal Design might be best considered as an overview, consolidation, or generalized inclusion of features addressed in either the Americans With Disabilities Act of 1990, Pub. L. No. 101-336, 104 Stat. 328, for the benefit of improving accessibility for those with physical limitations, or the broader principles of Universal Design, which include aesthetic design, flexible arrangement, simplicity of design elements, and intuitive use (Burgstahler, 2015). The NAEA *Design*

Standards from 2015 discuss a partial selection of both ADA and Universal Design

specifications in NAEA's recommendations for the design of studio art classrooms and

spaces. The overarching concepts of accommodation and access for all students,

flexible arrangement, aesthetic design, and provisions for traditional and new media are

covered, but I found these generalizations to be somewhat ambiguous when trying to

determine their presence in the art classrooms participating in this study. It has also

been challenging to group all of these important issues into a few simple items on a

checklist, especially given the more specific questions and issues that arise when

reflecting on the effectiveness, legal implications, and applicability of these theories (and

laws) in studio art classroom settings. Given the limitations just described, this study

found that all of the art teachers and the schools in which they serve are neither

adequately equipped to deal with the full spectrum of user abilities and disabilities, nor

do these teachers and schools seem particularly knowledgeable in adopting and

implementing Universal Design strategies. Like several of the other areas of

recommendation covered by the NAEA's *Design Standards for School Art Facilities*,

there is a mixture of approaches to the ways in which schools attempt to address

accessibility issues and aesthetic and utilitarian design. Understanding the need to

explore this specific category in depth in other studies, and for the purpose of reporting

the findings that emerged from this study specifically, I will break the findings into two

categories: (1) ADA and accessibility issues, and (2) Universal Design factors.

ADA and Accessibility Issues

One of the most easily identifiable accessibility provisions for studio art

classrooms is an ADA compliant sink (Figure 4.2.1). These sinks must have enough

clearance underneath for a wheelchair to have room to move in and out. Eight of the

participating sites in this study have ADA compliant sinks. Two other sites have sinks

that might technically meet ADA compliance, but they appear to be too low and blocked

by functional equipment to actually be approached by students in wheelchairs (Figures 4.2.2 and 4.2.3). At least two classrooms, while equipped with an appropriate ADA sink, have items placed underneath the sink that, at the time of my site visit, were blocking immediate access if a student in a wheelchair needed to use it (Figure 4.2.4). Six of the participating classrooms do not have ADA sinks installed, two of which are known to have been built after the ADA was signed into law; the other four were likely built prior to that date. Finally, two classrooms do not have sinks available for student use at all, so the question of access applies to all students who are served by the space, not just those with disabilities.

A particularly indistinct area listed in the NAEA recommendations relates to a "barrier free" space. This appears to be meant to encompass several of the access related issues in classrooms, including sinks, table-to-floor clearances, general movement obstructions, and routes of egress (which are also a fire and safety code issue). Given that many of the classrooms in this study do not actually meet the square footage recommendations for the number of students typically present in the space, both the generalized notion of what "barrier free" means in terms of the NAEA *Standards* and what the real numbers indicate would suggest that, with few exceptions (Sites 3 and 18 specifically), none of the other participating classrooms in this study are equipped spatially to meet the access needs of students in wheelchairs or those that otherwise need "barrier free" accommodation. And although Site 18 seems "barrier free" in terms of egress space, the student tables are likely too high from the ground for any student with physical limitations to be comfortably accommodated.

Figure 4.2.1. Site 3 ADA sink.

Figure 4.2.2. Site 7 ADA compliant sink?

Figure 4.2.3. Site 18 ADA compliant sink?

Figure 4.2.4. Site 11 ADA sink with

blocked access.

Only one of the teachers I interviewed has recently taught a wheelchair-bound student, which raises questions about where these students are being educated and whether or not there are studio art facilities somewhere in a district's schools that allow these students to flourish in creative activity. My experience and interaction with the schools participating in this study left me wanting for more information and wondering

how schools are addressing the creative needs of this population of students. The teacher in the study who most recently taught a physically disabled student stressed that it had been a frustrating experience, as the student was unable to accomplish much of the work given to him, even with a paraprofessional aide working to assist him. She argued that it was pointless to try to teach him anything under those circumstances and that attempting to do so was a distraction to her as she faced the challenge of working with an already full classroom of able-bodied students. Thus, at least in terms of access for students with physical disabilities in a *best case* scenario, this study's findings suggest that a student in a wheelchair might be able, in a few classrooms, to come into the room through a normal sized doorway and position himself or herself at the table closest to the door, but may not particularly be able to move around the room fluidly, or even potentially get to the ADA sink specifically designated for his or her use, which also may or may not be available in the classroom.

Correspondingly, during my full day visit to participating schools, I also asked teachers about tools and adaptive equipment or technologies that might be available to facilitate creative activities for students with visual impairments, physical disabilities, or other special needs if and when they ever served this population in their classrooms. Each teacher responded that they have almost no knowledge of adaptive tools for artistic activity, and that their classrooms have no adaptive equipment on hand. Examples of adaptive tools include grips for paintbrushes, crayons and markers, along with specially designed scissors and easels. The teachers also overwhelmingly reported that they have not been inclined to research what, if any, specific adaptive artmaking tools are available to assist students who fall into this category.

The most optimistic finding in this section of the study is related to students who deal with mild to moderate hearing impairments. Portable assistive listening devices are easy to acquire and relatively inexpensive purchases for schools. On the three or four occasions when students needed hearing assistance in art classes that I observed

during this study, either the student or an accompanying teacher would hand the art teacher a pocket-sized device with a clip-on microphone, often attached to a lanyard that the teacher placed around her neck and wore throughout the class session. At the end of the class, the art teacher transferred the device back to the student or accompanying teacher and continued about her day. Out of curiosity, after observing one such occasion, I asked the art teacher if she left the microphone on during studio or art-making times during the class session, particularly given that she, like most art teachers, walks around the classroom speaking with students individually as they need assistance or consultation. Her eyes opened widely, and she said, "Oh, I never thought of that! I guess she hears all of that! I wonder if it bothers her? It must, but she's never said anything. I'll have to try to remember to turn it off next time."

In conclusion to the accessibility issues raised here, ADA sinks *may* be available in some studio art classrooms (notwithstanding the fact that some of these sinks are currently being blocked by boxes or other objects), notably barrier-free spaces are difficult to find in the art classrooms in this study given their already limited square footage; and adaptive tools and technologies are essentially absent from the list of available resources, with the exception of hearing aids. But given that it has been difficult to find students in need of the items and accommodations discussed here, these findings may be a moot point for now. A more in-depth investigation into where students with the addressed accessibility needs are currently being served and whether or not schools and school districts are providing for their creative and expressive needs wherever they are being educated would perhaps be a constructive next step.

Flexible Arrangement

The NAEA *Design Standards* recommends use of furniture on wheels, but none of the participant classrooms in this study are outfitted with any significant furnishings on wheels. Site 18's beautiful new butcher block-style tables are not only *not* on wheels,

but, according to the teacher, they are also so heavy that at least two adults are needed

in order to move them just a few feet (Figure 4.2.5). Site 6's locker-based wooden-

topped tables are also largely cumbersome to move (Figure 4.2.6), according to the

teacher. Almost every teacher interviewed for this study indicated that their furniture is

situated in its current placement through careful consideration of the most efficient use of

the limited space available and will not be moved again during the school year. A quick

internet search and perusal of images brought up under the search phrase "art

classroom tables" demonstrates that few of the options available for art classroom tables

come with attached wheels. Thus, flexible arrangements for student workstations do not

appear to be available options for teachers, and those classrooms participating in this

study demonstrate no exception to that trend.

Figure 4.2.5. Site 6 tables.   Figure 4.2.6. Site 18 heavy art tables.

Similarly, adjustable or flexible shelving is not readily available. In all 18 of the

classrooms represented in this study, what is advertised or purchased as adjustable

shelving is a great deal less adjustable when an art teacher is considering the need to

move all of the *stuff* those shelves house from day to day in order to make adjustments,

as in the case of Site 7, for example (Figure 4.2.7). Site 1's ostensibly adjustable shelves

are large, cumbersome, and heavy, according to the teacher, so much so that the

teacher has said she will likely never be able to move or adjust them, even if she wants

to (Figure 4.2.8). Site 8, on the other hand, has adjustable metal shelving in the

storeroom, but, according to the teacher, needs more shelves added. The teacher said

that she has chased down the facilities personnel at the school in order to find any stray

shelves that might be located around the school. When they have found additional

shelves, she said she will typically install them herself (Figure 4.2.9).

Along with nearly impossible-to-move tables and shelves, every art classroom in

this study has various other fragments of storage systems that are combinations of

large, built-in, provisional, or makeshift arrangements. Figure 4.2.10 demonstrates how

the storage system for materials and other items has been arranged and built upon over

the course of several years—to the point where what was once considered makeshift

and provisional has likely come to be regarded as permanent and too difficult to move,

edit, or rearrange. Most significant to the findings of this study were those classrooms

that have built-in science room furnishings that the teachers describe as limiting travel

patterns or overall rearrangement of the layout of the space. These fixed furnishings

inadvertently define the layout, traffic patterns, and use of all other objects and

furnishings in the space. Site 5 has two such items, which will be discussed at length in

the Unique Problems section of this chapter, but see Figure 4.2.11 to note how these

built in furnishings dictate the rest of the room arrangement. Similarly, Site 3's designers

installed a heavy duty, semi-circular built-in science workstation as a teacher desk/

demonstration table for what was known to become a dedicated studio art classroom.

This built-in piece of furniture takes up a large amount of square footage in the front of

the room and offers no flexibility in arrangement for this area of the room (Figure 4.2.12).

Figure 4.2.7. Site 7 stocked shelves.

Figure 4.2.8. Site 1 described as heavy

shelves.

Figure 4.2.9. Site 8 adjustable shelving

Figure 4.2.10. Site 10 provisional storage.

Figure 4.2.11. Site 5 science sink.
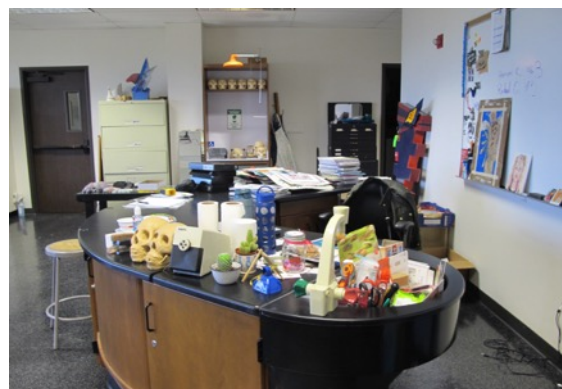
Figure 4.2.12. Site 3 science workstation.

Aesthetic Design

The question of aesthetic design is another area of the NAEA recommendations that lends itself to a mixture of interpretations. The findings of this study would suggest that aesthetic considerations, in some cases, do not always seem to be a priority for a school or school district, whether the classroom is new or older. The art teacher does not typically have much say in certain aspects of the aesthetics of the space, which may be why she uses other means to add personality and creative touches to counteract the sometimes lackluster elements that might exist in her studio art classroom. Universal Design theories include simplicity of design and intuitive use (Burgstahler, 2015), both of which are not characteristic of at least 16 of the classrooms in this study. The 2 classrooms that are exceptions, Sites 16 and 18, have been designed using clean, simple aesthetics and include design features that seem to suggest an intention toward intuitive use (Figures 4.2.13 and 4.2.14).

According to both teachers that I spoke with during my site visit, Site 18's designers made an aesthetic choice to use an open ceiling concept (Figure 4.2.15), which the teachers believed to be chosen as reminiscent of the Georges Pompidou Center in Paris (Figure 4.2.16).

Both Sites 16 and 18 are designed with a neutral color scheme, while Site 6 has one wall painted in a dark green (Figure 4.2.17). The elementary art room in this collective "education village" has been decorated in a bright red aesthetic (Figure 4.2.18). Site 1's cabinets are accented with a bright navy, in contrast to the bright white shelves (Figure 4.2.19). Site 14's cabinets are covered with a muted green laminate (Figure 4.2.20), while Site 15's have been covered with a light purple laminate (Figure 4.2.21). Finally, Site 4's teacher has used patterned contact paper and fabrics to add her preferred aesthetic to the light blue built-in cabinets, her desk, and an area on the front wall that frames the projection screen (Figure 4.2.22).

Figure 4.2.13. Site 16 modern aesthetic.

Figure 4.2.14. Site 18 modern aesthetic.

Figure 4.2.15. Site 18 open ceiling.

Figure 4.2.16 Georges Pompidou Center,

Paris.

Figure 4.2.17. Site 6 green accent wall.

Figure 4.2.18. Site 6 red color scheme.

Figure 4.2.19. Site 1 blue shelving

(detail).

Figure 4.2.20. Site 14 green laminate.

Figure 4.2.21 Site 15 light purple

laminate.

Figure 4.2.22. Site 4 patterned accent

aesthetic.

Furnishings

Like dedicated spaces for the sciences, media labs, and other fine arts areas,

such as band and choir, to name a few, studio art classrooms want and need a

reasonably specific list of certain furnishings on hand in order for creative processes to

flow optimally, especially in the educational setting. The NAEA, in its *Design Standards*

for School Art Facilities, names several of these, although their list is certainly not

exhaustive. Furnishings, for the sake of this study, include items such as tables, chairs,

easels, kilns, paper cutters, mat cutters, and other similar "loose" items found in the art

room. Sinks, storage options, and teachers' desks are not considered furnishings here and are discussed separately in their own section.

Of the furnishings or pieces of equipment recommended for school art facilities by the NAEA, four appear to be well known needs or at least are accepted by schools as fundamental provisions for the art room when they are requested for purchase and approved. I state this with some confidence because nearly all of the sites in this study have these particular items on hand in their art rooms. Drying racks and paper cutters are present in every classroom but vary to a degree in number available and size. These two items do not always have a permanent fixed location or even a less-than-awkward placement, but they are at least present in one way or another in all of the classrooms included in this study. For what may be obvious reasons, the smaller the classroom's square footage, the smaller the drying rack/s and paper cutter. Separately, and in somewhat equal measure, many of the participant classrooms have light boxes and mat cutters on hand, although these two items in particular are frequently tucked away in a closet or underneath a table and retrieved only when needed.

The NAEA suggests permanently placed stations for paper cutting and matting artwork, but while three schools have permanent papercutting stations like the one at Site 3 (Figure 4.3.1), no participating site has provisions for a permanently situated mat cutting station. Site 6's art teacher was working with a couple of students on matting their work when I conducted my site visit, which gave me an opportunity to see one way that art classes "make do" when matting needs to be accomplished and there is not a permanent station on hand. In preparation for an upcoming exhibition, a student asked the art teacher to assist her with cutting a mat for one of her two-dimensional pieces. The teacher took the student through an internal hallway to the kiln room and found the mat cutter, which was leaning against a wall (Figure 4.3.2). She then placed the mat cutter on an open area of the floor just adjacent to the wall and demonstrated to the student how to measure and cut the mat board. This temporary setup location required

the teacher to be working in an internal hallway for several minutes, causing her to lose

visibility of her other students during that time. Alternatively, the teacher at Site 13 was

also working with her International Baccalaureate students to prepare for an exhibition,

but this was happening as part of a class session, so she set up a temporary mat cutting

station at a student work table and worked with those students individually to instruct

them in how to cut the matboard to mat their pieces during that class on the day of my

visit.

Figure 4.3.1. Site 3 paper cutter & table.

Figure 4.3.2. Site 6 mat cutting

"station."

Lightboxes are recommended and may be on hand but are often stuffed "here

and there" in the nine or more participant classrooms that have them. Teachers store

them in closets, underneath a table, or in a storage area (Figure 4.3.3) and reach for

them, most often, during spontaneous moments with individual students during studio

time. Sometimes this spontaneity comes with a little extra work, especially because

lightboxes are rarely given a priority countertop space in an often-crowded general

studio art room. When Site 2's teacher offered the lightbox to a student in order to further

her work, on the day of my visit to the classroom, the teacher got on her knees, pulled

the lightbox from underneath the front table, unplugged the pencil sharpener, plugged in

the lightbox, and then positioned the lightbox on a plastic storage bin as a temporary

station (Figure 4.3.4). She then told the student to sit on the floor and use the bin as a

little desk while working with the lightbox. After the student was finished with her work

there, the teacher repeated the process in reverse in order to return everything back to

its original home.

Figure 4.3.3. Site 18 lightbox storage.   Figure 4.3.4. Site 2 lightbox "station."

One free-standing but permanently located furnishing often desired in an art

education setting, the kiln, is not listed at all on the NAEA's overall recommendations for

general studio art classroom furnishings. It is listed, instead, as a recommendation for a

dedicated ceramics program or studio classroom. This is not to suggest that the NAEA

does not or would not recommend a kiln at each school site, but it is not included in the

list of furnishings suggested for the general classroom while ceramics carts and potter's

wheels are. This might be because it places kilns in a different category from these

other items, but if that is the case, it would be helpful to see that category addressed in

Part Two: General Specifications of the *Design Standards* publication (NAEA, 2015)—

especially given that most schools I have visited throughout my professional career that

have dedicated ceramics studios are large public high schools or elementary, middle, or

high schools with a specific visual arts concentration. In spite of kilns not being

specifically mentioned as a furnishings recommendation for general art classrooms, they are a relatively well understood provision for art classrooms, as evidenced by the fact that 12 of the 18 participant sites have kilns onsite, usually located in a separate but adjacent storeroom equipped with a localized ventilation system (Figure 4.3.5). Two of the 12 sites with kilns (Sites 1 and 12) locate them in a different area of the school that is not in particularly close proximity to the participant classroom. Site 1 shares a kiln with the middle school, which is located downstairs from the elementary art room. Not only do the two elementary art teachers need to arrange to transport their clay pieces downstairs via stairs or cart and elevator, but the architects also ended up placing the access door to this kiln room inside the middle school classroom, even after the long-standing elementary art teachers had specifically requested the access point to the shared kiln to be from the hallway outside. The impact of this, according to the two elementary teachers is that accessing it "doesn't always fit with your schedule, or there is a class going on in there … just getting the stuff in and out is physically more difficult than if it had been where we had asked it to be" (Interview Data, 2016).

Ceramics carts and potter's wheels are on the recommended furnishings list for general studio art classrooms, but these items are only present in three of the participating studio spaces, Sites 3, 13, and 18 (Figure 4.3.6). Where there is a specific and separate ceramics studio space in the art program, such as Sites 6 and 9, these items are present and in regular use.

Figure 4.3.5. Site 18 kiln and slab roller.   Figure 4.3.6. Site 3 potter's wheels.

Movable easels are also recommended by the NAEA for the general art studio. Only two of the participating classrooms have two to six floor-standing easels as a regular provision. Site 17 is using a choice-based curriculum for its second through eighth grade students, so the teacher has set up six easels in the painting area of the room (Figure 4.3.7). Site 6's teacher allows advanced art students to use the two or three floor-standing easels she has available in the classroom. There may be more available for use, but these were the only ones I saw during my observation. Tabletop easels are a bit cheaper and can be purchased and stored in a class-sized set more easily than the floor-standing ones and are thus more prevalent. Site 4 has two different styles of tabletop easels available, the previous teacher having purchased wooden ones that are not fully collapsible (Figure 4.3.8). The current teacher has purchased another class set of fully collapsible ones and prefers to use them instead (Figure 4.3.9). She now has two sets of tabletop easels stored in the classroom, but only uses one.

Bookcases are recommended for use in studio art classrooms. Figures 4.3.10-12 present a few examples of how bookcases are seen in use in today's classrooms. In most participant classrooms, books were present in the space, but not observed in use.

Figure 4.3.7. Site 17 standing easels.

Figure 4.3.8. Site 4 wooden tabletop

easels.

Figure 4.3.9. Site 4 collapsible tabletop

easels.

Figure 4.3.10. Site 6 bookcase.

Figure 4.3.11. Site 18 book storage.

Figure 4.3.12. Site 17 bookcase.

The NAEA recommends large work surfaces and adjustable heights for tables; and for seating, NAEA suggests that an art room have age-appropriate seating, some specialized media seating (potter's wheels, drawing horses, stools), and seating to accommodate special needs students. Every participant studio classroom in this study has some version of tables that constituted a flat work surface, and each space has one version or another of typical classroom or studio seating available for student use.

Sites 1 and 14 might have the only height adjustable tables in this study, although this was not always a feature easy to discern. In both cases, even though grade levels varied throughout the school day, neither teacher adjusted the tables on the day of my visit. The only time I have ever personally observed a table height adjustment between grade-level class sessions was at a non-participant school when the student teacher I was observing was instructed by the cooperating teacher to do so. The adjustment took about three to five minutes for a total of three or four tables. One can reasonably suppose that whether or not a teacher finds making these changes convenient is dependent on the teacher and what efforts she feels need to be prioritized on any given day in her studio art classroom. My experience in visiting classrooms, both as a part of this study and through other professional visits I make, more often than not suggests that height adjustments for body size and comfort are either a low priority for teachers, are more inconvenient or difficult to undertake than the product claims, or are simply not available in some art rooms. Typically, middle and high school students do not need height adjustable tables since physical growth related to height generally reaches average adult sizes, under most circumstances, during early adolescence—accessibility and special needs students notwithstanding.

Issues associated with age-appropriate seating in this study were found to most affect elementary students—chiefly kindergarteners and first graders, whose bodies are too small for the average-sized elementary tables and chairs—or conversely, middle school students who are attending art classes in rooms that serve and are equipped to

suit the generally smaller bodies of elementary students. Three classrooms (Sites 10, 14, and 17) have tables that are sized "appropriately" for elementary students, but both kindergartners and fifth through eighth graders were observed having difficulty fitting into these seating options. Site 17 serves K-8 students. During my site visit, I observed both kindergarten and sixth through eighth grade students experience discomfort and the awkward positioning of their bodies in order to work at the tables and chairs provided (Figure 4.3.13). At Site 10, several kindergartners attempted to gain leverage either by propping themselves up on their knees in their chairs or trying to straddle the corner of the seat, half-standing with their feet planted on the floor to stabilize their bodies while working. The teacher quickly asked these students to sit in the center of the seat on their bottoms. When the students fulfilled the teacher's request, their legs were left dangling, and it looked to me like they struggled to get comfortable while working (Figure 4.3.14). Alternatively, at Site 14, a few older elementary students seemed to have trouble fitting their legs in between the table and the stools they were sitting on, with the tallest students looking uncomfortable as their torsos and arms leaned over their work while their bottoms and legs straddled the stool for support (Figure 4.3.15).

Site 18's tables and chairs present a unique problem for students. The tables are a beautiful new butcher block style and aesthetically suit the modern design of this brand-new space. The stools were purchased to complement the tables and do so, aesthetically. Both, however, are a taller height than is typical in most schools (Figure 4.3.16). Several smaller students needed to prop themselves up on their knees while working at these tables, and, according to the teacher, many have difficulty reaching art materials placed in the middle of the table. During one of the classes I observed, the teacher gave students the option of completing some of their work using the bottom shelf built into the table's structure. This turned out to be what seemed like a comfortable spot for several students, even though they were sitting on the floor while working. I detected

a sense of intimacy in the students' relationship with this particular space in their

classroom, with their work product, and with each other while using it.

Figure 4.3.13. Site 17 K-8 art tables and stools.

Figure 4.3.14. Site 10 PK-5 art tables and

chairs.

Figure 4.3.15. Site 14 K-5 art tables and stools.

Figure 4.3.16. Site 18 grades 2-5 art

tables and stools.

A finding that stands out in one high school studio art classroom participating in

this study is in relationship to a standard furnishing found in many studio art classrooms

in the U.S. This studio work table is even shown as examples in images found in the

NAEA's *Design Standards* publication (2015). The tables have a large woodblock work

surface that sits atop a set of small lockers intended for students' use or general storage

(Figure 4.3.17). The teacher and some of her students stated that the distance between

the base of lockers and the edge of the tabletop is not deep enough for them to

comfortably position their knees underneath. During class sessions on the day of my site visit, I observed three or four students per class sitting uncomfortably hunched over their work.

Figure 4.3.17. Site 6 high school art tables and

stools.

Technology

Likely due to the fast-paced innovations and improvements to digital device technology, the NAEA's *Design Standards* covers the area of technology somewhat ambiguously. It is difficult to define needs, trends, and dependable equipment recommendations in the ever-evolving digital era in which we find ourselves today— making technology one of the most fluid and unpredictable areas of provision for all classrooms, much less art classrooms.

The NAEA's recommendations for technology in the *Design Standards* are most specifically focused on instructional delivery methods, as opposed to additionally considering design and arrangement related to devices, materials, and equipment that support art-making endeavors.

The recommendations for instructional technology include having a variety of "audiovisual equipment," screens for projection, blackout shades so that students can see the projected images, electrical and internet access for both students and teachers,

and appropriate placement of electrical outlets (floor or ceiling) in order to have multiple safe access points. In addition, the technology recommendations list a need for battery backup systems for multimedia equipment and suggest that classrooms should be updated regularly in order to keep up with new and emerging digital technologies.

With that in mind, this study found that participating studio art classrooms have four areas of consistency across the range of school types; but apart from these commonalities, the variable quality of instructional technology and equipment is quite pronounced among the classroom spaces included here. The first consistent result across all of the participant classrooms in this study is that all of the studio classrooms are found to be equipped with one or more computer devices for the teacher (a desktop, laptop, or tablet). Second, all site classrooms have a projection device on hand, such as an LCD projector, a Smartboard, or a Promethean system. Third, found to be present in all participating classrooms is internet and electrical access for teachers. One NAEA recommendation consistently not found in any participant classroom were the recommended battery back-up systems for multimedia equipment.

It is important to note here the very complex nature of the inclusion of technology as only one of several components of this research project. As such, it is nearly impossible to gather enough highly specific information on the many options of devices on the market in any given year, or on their uses in the classrooms included in this study—certainly not when this research is attempting to gather information in schools whose individual histories span decades, and when the interest of this research is on the totality of the physical environments' design and provisions for creative activity. Consequently, a number of questions will be raised in this section that the one-day site visits at each school, and the subsequent studying of photographic data, cannot answer. Rather than reach out to teachers in order to confirm the answers to these questions, I believe these unanswered questions demonstrate the enormity of the job of tracking and responding to technological provisions in studio art classrooms. I would suggest a

separate study to more fully understand the problem of ever-evolving technologies for both instruction and art-making in the studio art classroom.

The Problem with Technology in K-12 Art Classrooms

Before describing the patterns found in both instructional and art-making technologies in detail, it is necessary to address the most significant finding of this study as it relates to the area of technology in the studio art classroom—the incongruities discovered to exist between the rapid pace of technological advancements, school administrations' interests in keeping up with that pace, and teachers' struggles with fitting all that is related to technology (instructional or art-making) into their complicated work days and already wide range of responsibilities in their studio art classrooms.

We live in a world in which the rapidly moving pace of technological development is widely known and felt in nearly every facet of life in the 21st century. That school administrations want to keep stride with today's digital culture as best as possible is certainly not surprising, but on the "receiving end" of the pursuit of educational pace-setting in the digital era are the teachers who have to learn to use the equipment and software and implement new traditions of learning and engagement offered by these shiny new gadgets. This is where the problem with technology in the art room gets complicated.

Only five participating art teachers in this study were observed demonstrating relative ease in the use of more complex technological equipment, along with either the externally expressed or intrinsically implied requirements that the concepts of 21st century learning are inspiring in school districts around the nation. These five teachers have expressed interest to varying degrees in including technology in creative ways in their classrooms, both instructionally or in relationship to art-making processes. Other teachers in this study, on the other hand, appeared to be most comfortable with computers, internet searches, and the basic knowledge they need to utilize LCD

projectors, Smartboards, or Promethean systems for instructional delivery and class

discussions, and not much else. At least three of the teachers expressed concern that

they will have to commit a great amount of time in order to learn how to understand and

utilize new media in a way that is constructive and beneficial in their classrooms. Two

teachers declared that they are too close to retirement to want to invest their time or

efforts toward mastering new media processes. Another simply said that she is not

interested in new media. Furthermore, at least two expressed feelings that there is

already too much going on in teaching traditional media in their classrooms, so to add

digital media in any more than an instructional support role is simply not possible.

I asked a colleague, Dr. Sean Justice, whose work is centered in digital

technology and new media for art-making, what his thoughts are on these findings,

particularly the incongruence I have found during the course of this research. This was

his response via email:

> There's a lot of enthusiasm for school reform coming from maker
> education and digital learning (a diffuse, amorphous grouping that
> includes advocates, researchers, practitioners, and the commercial
> enterprises that produce the huge variety of tools and machines at the
> center of the maker movement), but I'm skeptical about sustainable
> change taking root in real schools until or unless mindsets change. In
> other words, school reform without learning reform is a zero-sum game.
> Now I think that mindsets do change, over time, slowly, and that they do
> so in concert with tool changes (e.g., the hand makes the brain, the brain
> makes the hand; and body = mind). My prediction is that school reform is
> happening and will continue to happen. But tool and machine evolutions
> are moving much faster than cultural, conceptual, emotional, political
> evolutions. So, we're probably not going to see widespread improvement
> in learning equity any time soon. A more precise way to say this might be
> that changes in learning equity are going to be uneven, with some
> learning ecologies gaining a lot, and some losing a lot, and most staying
> roughly status quo. The distribution of these changes will probably follow
> established norms; to say it crassly, the rich will get richer, etc. This is not
> a new analysis at all; you can find people from across every field of ethics
> saying precisely this same thing, (Personal correspondence, May 19,
> 2017).

Instructional Technology

  "Personal" devices, internet, and electricity access for teachers. As

mentioned above, all studio art classrooms in this study are equipped with internet and

electrical access for teachers. Site 6, however, seems to be the only classroom that is

equipped with an internet system that limits the teacher's ability to fluidly move through

her classroom when she is presenting information or instruction to her classes. The

internet access permission correlated to her LCD projection system is controlled by a

very long passcode and is limited to her desktop computer for security and

manageability's sake. When she leads a class discussion using the LCD projector, she

directs the discussion from the front of the room while standing in close proximity to her

desk area. She indicated during our interview that she finds this limitation frustrating, not

only for class presentations, but because the internet being accessible through an

extremely long passcode also creates barriers to student access during studio time. No

other teacher mentioned similar limitations with mobility, although most had laptops that

were wired into the presentation device, thus requiring the teacher to return to the

laptop's location in order to change pages on the screen. At least two schools have

wireless access to the presentation device from anywhere in the room. Each teacher

has also been issued one or more "personal" device, either a desktop computer, a

laptop, or a tablet.

  Because all of the variably-situated schools included in this study have provided

teachers with internet, electrical access, and "personal" devices for grade submission,

email communication, and instructional planning, it is reasonably safe to assume that

these provisions have become standards of practice now common in school cultures

across the U.S. Internet and personal devices, along with the electrical charges needed

to keep these systems active, have, no doubt, revolutionized many aspects of the

educative responsibilities of teachers and administrators. For the art teacher, these

technological provisions offer nearly immediate access to an infinite library of art images

across time, media type, and national boundaries. Virtual museum visits are now possible in the studio art classroom, as well as an endless supply of video records of contemporary artists' processes, and documentaries, photographs, and movies about artists' lives, their stories, their histories, and their work. Every participant teacher, as observed during this study, utilizes these digital resources in one way or another throughout her teaching day and in each of her class sessions on a regular basis.

Delivery methods. Given that the above-mentioned technological resources are provided uniformly across the schools included in this study, the devices from which instructional delivery is made are where the sites' provisions begin to diverge. All participating school systems provide a digitally based method of instructional delivery, either a cart-based, wall- or ceiling-mounted LCD projector, a smartboard, or the latest technological advancement in this area, a Promethean interactive whiteboard or panel.

LCD projectors: cart-based or wall-/ceiling-mounted. Ten of the classrooms studied are equipped with LCD projectors; six of which are ceiling mounted, one of which is wall mounted, with three others situated on carts. Site 5 has both a cart-based LCD projector and a Smartboard (Figures 4.4.1 and 4.4.2). During a class observation on the day of the site visit, the teacher asked students during a couple of class sessions to make room on the carpet area so that she could center the cart-based LCD projector for a lesson presentation. While the Smartboard is operable, the teacher mentioned that she does not know how to use it well enough to utilize it during her lessons, so she prefers to use the cart-based projector. Site 16 is the only classroom that has a wall-mounted LCD projector in use for instructional presentations, with an accompanying manually pulled-down projection screen installed just below the device (Figure 4.4.3). Site 4's ceiling-mounted LCD projector and associated manual pull-down screen, according to the teacher, was "accidentally" signed off on one summer and installed before anyone in the district office realized the mistake (Figure 4.4.4). She was almost giddy with her good fortune in receiving this tool for her classroom. If the apparently unintentional installation

had not taken place, this classroom would be the only one in this study without any digitized instructional technology delivery method.

Figure 4.4.1. Site 5 cart-based LCD projector.

Figure 2.4.2. Site 5 Smartboard (behind the easel).

Figure 4.4.3. Site 16 wall-mounted LCD projector and manual screen.

Figure 4.4.4. Site 14 district 'mistakenly' installed LCD projector.

Emerging technologies: Smartboards vs. Promethean. The remaining nine schools in this study, all but one of which are public schools, are equipped with the most emergent advancements in interactive instructional technology: either smartboards or Promethean systems (Figure 4.4.5). The most compelling finding related to these

evolving technologies, though, is how quickly even these have become or will likely become obsolete. Through conversations with teachers and school administrators at participating schools, I became aware that in the last 13 years that I myself have been out of the classroom as a full-time art educator, smartboards as a technological advancement have, in some cases, both come and gone. What was viewed as state-of-the-art within this past decade, complete with its hefty price tag, is now part of the growing piles of obsolete technology sitting in dumpsters or being decommissioned and deconstructed into recyclable parts. Some schools that invested in SMART Boards five or ten years ago, have now moved on to Promethean whiteboards—or, even more recently, Promethean interactive flat panels like the one installed in Site 18's art classrooms (Figure 4.4.6). This newest technology boasts, among other things, better image definition and a change in lighting features, which, according to the teacher at Site 18, allow students in the back of the classroom to see the presentation as easily as if they were sitting in the closest proximity to it (Interview data, 2017).

Figure 4.4.6. Site 18 newest in Promethean Panel technology.

Figure 4.4.5. Site 10 Smartboard technology.

LCD projectors and screens vs. smartboard technology. While, in most

circles, technological advancements are readily agreed to be worthwhile, even

necessary investments, as suggested by the data and teacher opinions in this study,

interactive smartboard technologies might be more than most art teachers need or want

in their classrooms. Only two teachers participating in this study were observed using

their Promethean panel for some of its more advanced technological features, with the

other seven teachers limiting their use to the same features of the smartboard or

Promethean technology that are also available in LCD projector systems. During my site

visits to these schools, and in my experience visiting a large number of other art

classrooms not included in this study, I have observed three functions that art teachers

need their instructional technology to accomplish: projection of the digital lesson

components (usually a PowerPoint slideshow), internet access to art images, videos,

and online website or museum exploration, and the ability to project demonstrations onto

a screen for the whole class to see. All three of these tasks can typically be fulfilled using

a personal device such as a laptop or tablet, an LCD projector, a screen, and a

document camera—the first three of which are available in each of the 18 classrooms

included in this study. Seven of the classrooms have document cameras on hand as

well. Two teachers expressed satisfaction in using some of the projection and interactive

tools found in the latest Promethean systems, but the other seven who work with either

Promethean systems or smartboard technology stated that they did not feel either

system's interactive qualities enhanced their lessons in any substantial way. One of the

teachers at Site 13, whose district recently mandated the change from smartboards to

Promethean whiteboards, said this about the new technology:

> I love the Promethean, but I don't use it as a Promethean. I just use it
> as a projector … because you have to save all of your programs into a
> program that can be run through there if you want to have it be
> interactive … and I don't care to have it interactive. Art is so interactive; I
> don't need to play silly games with [my students] on the Promethean
> board. An LCD projector would be fine. The ability to project, to access

the internet, especially YouTube videos, and then for my PowerPoint, is instrumental to our instruction, (Interview data, 2017).

Screens. Most schools in this study using LCD projectors as instructional delivery devices have also installed electronic or manual pull-down white screens to work in complement to the projector. There are a few exceptional circumstances regarding screen provision that add situational examples of what "making do" looks like in the studio art classroom:

Site 15 has the only truly makeshift screen, which is in the form of white paper or fabric that is applied by tape and stick pin to the front wall's surface—which also contains a makeshift "chalkboard," a rectangular section of the wall has been painted with black chalkboard paint and serves as the only instructional writing board in the classroom (Figure 4.4.7).

Site 12's classroom is equipped with a manual pull-down screen, but its placement seems ineffective. I did not observe it in use during my site visit, but the placement of the screen seems problematic in that it is located in front of a wall of large windows, causing it to be backlit by natural light. Window shades are also installed along the wall of windows, which may negate some of the negative effects of a backlit projection (Figure 4.4.8).

Figure 4.4.7. Site 15 fabric or paper screen.

Figure 4.4.8. Site 12 screen installed in

front of window.

Site 2's ceiling-mounted LCD projector is pointing toward the "front" of the classroom, while the screen is installed on the adjacent wall to the right of the "front" (Figures 4.4.9 and 4.4.10). If the LCD projector is swivel-capable, which it may be, the orientation of the classroom's instructional "front" may have changed when the art teacher moved into this classroom, but it was unclear why the projector does not point toward the display screen. The teacher did not use the LCD projector for any of her class sessions during the day of my site visit, so I did not have an opportunity to observe how she utilizes the system as it was installed at the time of my visit.

Figure 4.4.9. Site 2 projector pointed away from screen.
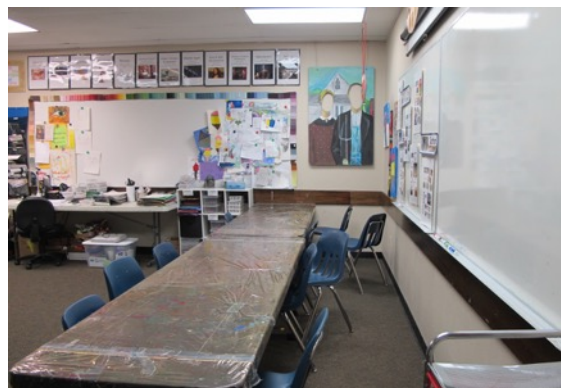
Figure 4.4.10. Site 2 screen wall on right, projector pointed to forward wall.

Document cameras, demo mirrors. The development of document camera devices for educational settings in the last decade has provided new possibilities for those art teachers who enjoy demonstrating specific skills or processes to their students during instructional sessions. Document cameras require a flat work surface where the teacher works underneath the lens while an image of her working is projected onto a wall or whiteboard for her students to observe live (Figure 4.4.11). Seven of the classrooms in this study are equipped with these cameras, although not all the teachers have them set up at a station that would make it easy for them to use on a regular basis. Site 2, as shown in Figure 4.4.10 above, does have a regular station arranged. The teacher has little room in which to work in the classroom in general, so the work space for demonstration is correspondingly tight.

Site 18, which is the most recently built and occupied school in this study, has installed the newest and most advanced technology in demonstration or document camera systems of all the sites in this study. The teacher is able to walk around the room during instructional and studio time, and, using Wi-Fi, a mobile document camera, and the Promethean panel system, she projects various students' work onto the Promethean panel from their position anywhere in the room as they work (Figure

4.4.12). During my site visit, she discussed various students' work with the class as she projected it to the Promethean panel for all of the students in the room to see.

Figure 4.4.12. Site 18 wireless document

camera.

Figure 4.4.11. Site 2 document

camera and demonstration space.

Alternatively, in the area of "technology" for demonstration, two schools have equipped their studio art classrooms with demonstration mirrors similar to those used in cooking classes or science classroom settings. Site 3 incorporates a ceiling-mounted demo mirror paired with the large semi-circular science workstation discussed in the Educator Office section of this chapter (Figure 4.4.13). Given what I observed during my site visit, along with conversations with the two teachers who manage it, this particular piece of demonstration delivery equipment is not used often. In hindsight, I should have asked to see it operated so that I could better understand how the teachers understand its function and value as it relates to their pedagogical practices.

Site 14 is equipped with a cart-mounted demonstration mirror that the teacher uses regularly during instruction. As I observed during my site visit, when she introduced

a process that she wanted her students to see demonstrated, the students sat on the

floor in front of the cart and looked up into the mirror to watch (Figure 4.4.14).

Figure 4.4.14. Site 14 demo mirror on cart.

Figure 4.4.13. Site 3 ceiling mounted

demo mirror.

Student Accessible Technology

Student computer, internet, and electrical access. Only a handful of studio art

classrooms contributing data to this study have provisions for students' direct and

regular access to technology. While 100% of the schools in this study provide internet,

electrical connections, and "personal" work devices for their teachers, only one school,

Site 3, has equipped its student body with these three technological tools in such a way

that was easily observed during their art classes.

Ten of the studio art rooms in this study have no computers earmarked for

student use housed in the classroom. Site 13 has access to a computer cart that can be

checked out from the library, while Site 8 has a computer cart available for student use,

but it is tucked away in a corner (Figure 4.4.15). Having observed in the space several

times, through this study and in observation of student teachers, I have not seen this cart

opened up or made available for use during a class session. Five other classrooms have

at least one computer "station" housed in the room, but the setup and ease of use are not ideal. For example, Site 15 has a computer placed on top of a card catalog in the back of the room (Figure 4.4.16), while Site 6's two student accessible computer stations are placed on top of what appears to be a combination flat file/computer station. It appears that what would have been the computer station or desk area has been cut off at the wall, leaving a challenging space for a student to try to sit at (Figure 4.4.17). Site 11's classroom has two computers also placed on countertops at the back of the room, and it is unclear whether or not they are operational (Figure 4.4.18). Site 9 seems to have the most user-friendly classroom computer station (Figure 4.4.19), and although it is located in a pretty tight corner, students used the computers during class time as needed. Site 16 also has what would be considered a user-friendly computer station area, but drying racks take up the "real estate" underneath what would otherwise be used for chair placement. The teacher told me that the stations are really only used during school-wide standardized testing situations and, thus, are not set up for use in the art classroom or as complementary components to the art instruction that occurs there (Figure 4.4.20).

Figure 4.4.15. Site 8 laptop cart.

Figure 4.4.16. Site 15 computer station.

Figure 4.4.17. Site 6 computer station.

Figure 4.4.18. Site 11 computer station?

Figure 4.4.19. Site 9 computer station.

Figure 4.4.20. Site 16 computer station.

Regarding electrical access points for personal device charging, Sites 3, 6, and 11 have floor-embedded outlets throughout the classroom. Two teachers mentioned that these are potential safety hazards for two reasons: they end up clogged with dust and debris, which causes concern about electrical fires that might be triggered by the build-up; they also have parts that do not stay flush to the floor, and thus serve as potential tripping hazards (Figure 4.4.21). Site 18, on the other hand, has ceiling-mounted retractable electrical outlets installed (Figure 4.4.22). I could not determine whether or not they are moved closer to the tables through a button or switch that the teacher uses as needed—otherwise they seem to be placed too high for the elementary students who participate in classes there to be able to use (Figure 4.4.23). I did not have the opportunity to observe them in use during my site visit.

Figure 4.4.21. Site 3 floor embedded

electrical outlet.

Figure 4.4.22. Site 18 ceiling mounted

electrical outlet.

Figure 4.4.23. Site 18 out of reach

electrical power access?

Technologies for art-making. Five schools of the 18 participants in this study demonstrate an intentional effort to provide the tools for digital art-making in their curricular options for students enrolled in art classes. The other schools in the study may have made some provisions for students to learn digital art-making technologies, such as graphic design, but those classes are only incidentally known by the art teachers that I spoke with and are typically taught in the technology department. There may also be access to some semblance of a "makerspace" on campus, but in 13 of the schools, these spaces are not collegially known by, included in, or collaboratively related to the visual arts program.

Of the five schools that proactively engage with digital media in art-making, Site 7, a special needs small school for elementary-aged students, has the most integrated, albeit simple approach. The teacher often uses a class set of iPads as a tool for creating photographs in the initial stages of a sequenced lesson plan (Figure 4.4.24). The lesson will typically evolve into an integrative project (integrating new and traditional media) that allows her special needs students to explore themes such as self, community, and environment, resulting in art-making experiences that are relevant to their lives and neighborhoods. Site 3's art-making options include the use of software applications such as Adobe Illustrator, because, as the only school in this study whose students are provided laptops for use throughout the school year, these devices come with creative software already installed. The teacher uses access to these software programs to incorporate them as media choices in her lesson planning.

The three other schools in this study that use new media in art-making do so as part of the broader visual arts program. The participant studio art classrooms at these three schools do not house digital making materials in their classrooms, but other classrooms in their department do. These broader art programs are worth mentioning because the school administrations and art education faculty in these schools are actively pursuing the inclusion of new creative technologies in their curricular options for students. Site 9, a public high school in a high socioeconomic community in the Northeast, for example, has a digital media lab located within the art department's upstairs wing of studio classrooms (Figure 4.4.25). Their creative technology classes are taught by art teachers who design the curriculum to support digital technologies as tools and media for art-making.

Site 12, a moderate-sized independent school in a rural area in the mid-Atlantic region of the U.S., is known in the community for its innovative approach to education. The school has recently converted the library into a media center equipped with "makerspace" tools and equipment. As the school began to prepare the faculty and

school community for the technology and learning opportunities that were being based in this space, the two high school art teachers strategized how best to include this "makerspace" into their already multifaceted curriculum. The younger of the two teachers had been hired about five years before my site visit and teaches both wet and digital photography. When the administration decided to renovate the library to include the well-equipped makerspace, she and the other high school art teacher, who is the one participating in this study, decided that the younger of the two should be heavily involved in learning as much as she is able about the creative technologies housed there. During our interview, both teachers spoke in collective agreement about why the younger teacher's interests, and even her age, make her the natural choice for learning to use the laser cutters and 3D printers, among other tools on offer at the new media center (Figure 4.4.26). They told me that, as the school began to develop plans for the makerspace, they both contemplated the possibility that traditional art media might one day become extraneous to the learning goals of the school and, thus, expose the art program to a potential cut. Most other teachers participating in this study did not voice concern about being cut out of their school's curricular choices because of 21st century learning objectives, but these two teachers and the group of teachers at Site 11 expressed the imperative for their art programs to engage students in new ways of learning art in the digital era so that they may enter their futures with the skills necessary to work fluidly in a digital world. They view digital media as new materials for art-making and are working to include them, along with traditional media, in their curriculum.

Site 11's head of the visual arts faculty group expressed his and other faculty members' commitment to actively preparing students for their future professional accomplishments, regardless of whether or not they are headed toward a visual arts field. He mentioned that the choices he makes in support of his students drives him toward whatever they will meet "out there" (Interview Data, 2017) in the adult world that follows their secondary school art experiences. As the department head, he also takes

this into account when choosing media options made available for students and when working with school administrators in hiring new art teachers. Two of the current faculty are teaching digital technologies exclusively. One teaches photography and related software, while the other teaches animation and 3D design and printing. Both of these areas of concentration have their own studio classroom/media lab (Figure 4.4.27). The three remaining teachers are all nearing retirement, including the one whose classroom is included in this study. Two teach traditional 2D painting and drawing practices, while the other teaches 3D design and sculpture. The department head told me during our conversation that, with the impending retirement of three of the five art teachers, he wants to make sure that the teachers that replace them be well-versed in the intersect between new and traditional media options. He is particularly interested in future teachers who will be able to work with students on digital methods for painting and drawing, given that there are already teachers in place who teach digital versions of photo, video, and animation. Along those lines, on the day of my site visit, he was working on creating a new "VR" studio space in the art program, which will allow for art making and exhibition of work through virtual reality experiences.

Figure 4.4.24. Site 7 iPads.   Figure 4.4.25. Site 9 digital art lab.

Figure 4.4.26. Site 12 Makerspace-part of the school's resource center.
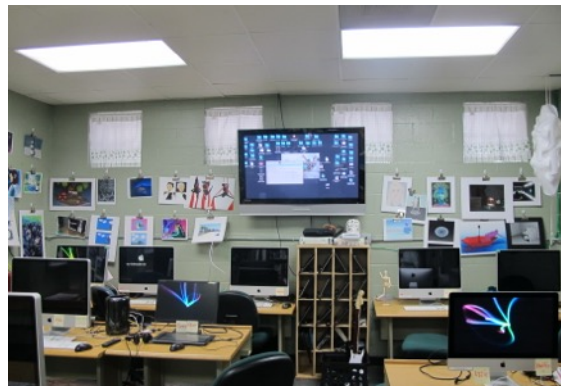
Figure 4.4.27. Site 11 animation studio.

Storage

Storage is an essential and highly influential component of a studio art classroom. This area of recommendations in the NAEA *Design Standards* addresses 16 specific design features (see Appendix B), which are divided into two categories:

- construction details, such as sturdiness, flexible shelving, variable sizing, and lockable

- types of storage, specific to adequate and appropriate storage for a variety of materials, equipment, and resources

Eight of the 10 recommendations for storage types include three subjective words that create a bit of a conundrum on the data collection checklist: "adequate," "appropriate," and "enough." One question arises from this subjective language following any attempt to assess or "measure" the storage types as adequate, appropriate, or enough: "Who decides what *is* adequate, appropriate, or enough for any of these art rooms' storage capacities?" In most cases related to this study, the "answer" to whether or not there is adequate, appropriate, or enough storage appears to be "no" for all three qualifiers, simply because these rooms are all overwhelmed with the *stuff* of art-making and the observed storage options were not found to be particularly accommodating of

the materials stored there. Only Sites 16 and 18 are not yet consumed with materials—

Site 16 because the teacher is the only one in the study who self-professes to be a "neat

freak" and constant editor of the *stuff* in her classroom (as an observer in the space, I

would also include the word "minimalist" in describing her space as it applies to her

teacher persona and management style); and Site 18 had only been inhabited for a little

over a month at the time of my visit, so it is difficult to determine if or when the space

might potentially outgrow its current capacity.

There are several factors that affect whether or not storage units or systems are

adequate, appropriate, or enough, including but not limited to whether or not the

classroom meets or falls short of the recommended square footage for the number of

students housed in the space, has additional storage adjacent to it or close by that also

meets the NAEA square footage recommendations, and whether or not the teacher

tends to be one who stockpiles materials, resources, equipment, and old student or

class projects, among other things. For the sake of this study, then, subjective factors

such as these will not be addressed directly. Rather, I have chosen to present the data

as they have naturally converged into significant groupings. This convergence has been

informed by (1) the expressed needs of the participant teachers, (2) what the materials

seem to dictate by the commonality of their storage situations, and (3) what the

observed classroom revealed about itself.

The storage findings will be presented, therefore, according to these three

categories[2]:

- Materials Storage

- Traditional Storage Furnishings for Art Rooms

- Works-in-Process Storage

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[2]It is important to note that for every example of the observed and photographed instances
shown here, there are several others that could stand in its place.

Materials Storage

  Paint storage. Paint and its storage routines found in the K-12 studio art classrooms included in this study, like most other materials stored and needing regular distribution to students, is suggestive of one of the greatest problems faced by art teachers on a day-to-day basis: quick, interchangeable, and sustainable access to a large variety of stored materials. Paint is used often enough in these classrooms to need to be kept on hand in the most convenient and easily accessible location in the room. While there are variations to sizes and types of packaging for paints used in the typical art classroom (acrylic, tempera, watercolor, oil, etc.), the most commonly used are acrylic and tempera paints in quart, half-gallon, and gallon bottles. Half-gallon and gallon bottles are sometimes paired with plastic pumps that add three to four inches to the top of the container and assist the teacher in more easily distributing portions of paint colors to trays, small storage cups, or a variety of other palette options. Otherwise, the teacher or her students, depending on the age group of students and management style of the teacher, will pour paint portions directly from the bottle or jug into palette options. Similar to most scenarios of this kind in the art room, the teachers' personalities, training, and management styles differ greatly and impact the process of storage, access to, and distribution of materials. However, the design and use of storage "systems," both those created as makeshift options and those that are built-in during the design process, can create challenging access situations that influence creative activity in the space.

  Site 6 is one example of built-in storage that does not quite work as it might have been intended to, and thus the teacher has adjusted her own system to fit the needs of this body of students in a suburban high school that hosts classes from Art I to Advanced Placement courses. The teacher has placed the acrylic paints in three sections of the built-in wall of cabinets in the classroom and allows students to access these paints as needed. Paints are stored by color here, although they are not always in the cabinet their color separation prescribes (Figure 4.5.1). Additionally, there is a variety

of container sizes, ranging from small cups and a few tubes to quart and half-gallon

sized bottles. The teacher mentioned to me that when she added pumps to some of the

half-gallon jugs, the cabinet shelving was not tall enough to store those bottles any

longer, so she began to place the bottles on the countertop below. As I observed

students during classes on the day of my site visit, they used the countertop as a central

location to gather several materials, including the paint in the bottles with pumps, and

also ones in the quart bottles (see Figure 4.5.2). It seemed that the countertop was most

conducive to quick and "fluid" access, even though that was not necessarily the initial

intent or vision for how this space might be used. The back and forth of placement for

paints in this location, while workable for the teacher and her students at Site 6, creates

both a fluidity of use and yet a competing disorder that could be informative for new

ways of thinking about how to better facilitate student access to these items in similarly

situated upper school classrooms in the future.

Figure 4.5.1. Site 6 paint storage—in
upper cupboard

Figure 4.5.2. Site 6 paint storage—
student 'accessible'

At Site 13, also a high school that supports beginning to advanced levels of art

students, paint bottles are similarly purchased in quart and half-gallon bottles, are stored

by color families, and are made accessible to students for independent use. They are

stored in tubs in a large built-in wall unit that houses shelves that are both deep and tall

(Figure 4.5.3). I did not observe these paints in use during my site visit, so I was not able to consider the effectiveness of this storage strategy, location accessibility, and fluidity of movement in and out of the space. All other high school teachers participating in this study allow for independent access to most paints and have varying but similar systems to those at Sites 6 and 13.

In all elementary classrooms included in this study, the teacher distributes paints to students through procedures they have created for themselves or have learned and adapted from their teacher training coursework. Each teacher stores and arranges paint bottles where they feel most comfortable, or wherever they find space that seems to work in their classrooms or storage systems. Site 14 uses an old media cart from the library to store the paints she uses for ready distribution in her classroom (Figure 4.5.4). Other unused paint bottles are stored in at least two other locations—the storage room and a side countertop. Site 10's teacher uses the floor in her offices to store gallon bottles of paint, as well as a large bottle of glue (Figure 4.5.5). Site 1's teacher houses her paint distribution center in a corner at the far end of her sink countertop. She uses quart-sized bottles to pour into palettes made of cups stored in plastic shoebox bins (Figure 4.5.6). Finally, Site 18's teacher fills lidded paint cups with a variety of colors and stores them on the countertop between the top and bottom cabinets, where neatly organized rows of paint bottles are stored (Figures 4.5.7 and 4.5.8). She distributes only one of each color around the room's tables and has students move their work around the room to whatever table houses the color of their choice. The teacher also stores a rack of dried tempera cakes on the countertop, with replacement cakes stored in another cabinet below.

Figure 4.5.3. Site 13 paint storage--student

accessible
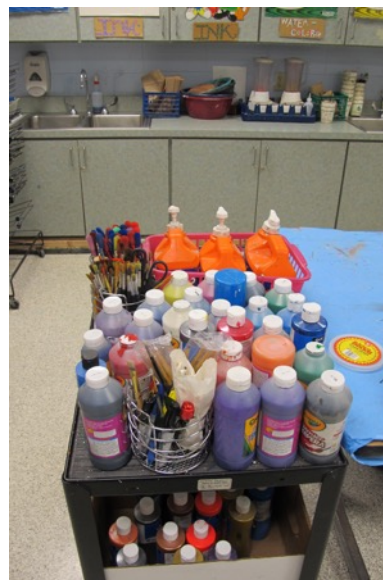
Figure 4.5.4. Site 14 paint storage

Figure 4.5.5. Site 10 paint storage—

in teacher's office.

Figure 4.5.6. Site 1 paint storage—

countertop corner

Figure 4.5.7 Site 18 paint storage –

countertop version
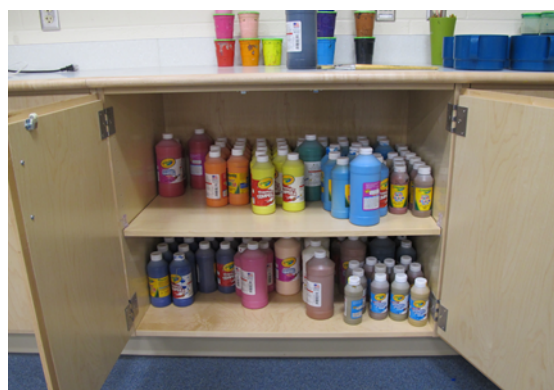
Figure 4.5.8. Site 18 paint storage—

below counter storage.

Paper storage. Like paint storage, paper storage was found to be unique to each site, as Figures 4.5.9-4.5.14 demonstrate. Site 18's paper is arranged by color in neat stacks in their new home, while the others are stacked (sometimes precariously) on shelves or stored in flat files or built-in cabinets. Three problems seem apparent when paper is stored as found in five of these storage situations: (1) paper edges are easily curled, ripped, or otherwise damaged; (2) access to students' choice of colors or sizes seems difficult to manage, both by visual knowledge of what is available, or by the ability to get to the preferred color or size choice depending upon its location in the stack or drawer; and (3) there seemed to be a wide variety of colors and sizes available in the storage rooms, but not immediately accessible to or available for student use, based on my observation of the classroom, storage spaces, and classes in session.

Figure 4.5.9. Site 18 paper storage.   Figure 4.5.10. Site 1 paper storage.

Figure 4.5.11. Site 9 paper storage.

Figure 4.5.12. Site 4 paper storage.

Figure 4.5.13. Site 5 paper storage.

Figure 4.5.14. Site 9 paper storage.

Miscellaneous materials storage. One of the most common problems regarding design and arrangement of studio art classrooms, as found in this study, is a lack of delineation in storage of the large variety and wide breadth of miscellaneous materials that teachers collect for potential art-making with their students. This assortment of materials in most art rooms includes the basics, such as pencils, erasers, markers, scissors, glue, etc., and more specialized items, such as straws, craft sticks, wire, yarn, beads, and possibly hundreds more. Only six photographs are presented here of what this problem looks like in the classrooms included in this study (Figures 4.5.15-4.5.20), but at least one similar photograph could be included for each of the 18

sites visited. To be clear, for 16 classrooms in this study, nearly every drawer and cabinet are similarly situated.

Three things that appear to exacerbate the problem are: (1) broadly interpretable open shelving; (2) inconsistency in sizes and shapes of purchased storage bins; and (3) the choice of purchased bins is typically by discretion of individual teachers and is often funded by their own personal budgets. This means that purchases of "enough" storage bins for all of the materials stored in the art room tend to cross through school years— and even teachers' tenures—in a given classroom, resulting in a "system-less" system in the classrooms involved in this study. How this problem might be addressed is complex, nuanced, and will require iterative work in design thinking processes. Few options are available in school furnishings catalogs, to date. Given what I have learned about this problem thus far, I believe it is a resolvable issue—but resolution will necessitate a shift away from leaving art teachers on their own to work through the problem of storing the unique variety of materials for art-making in their classrooms.

Figure 4.5.15. Site 2 miscellaneous materials storage.

Figure 4.5.16. Site 14 miscellaneous materials storage.

Figure 4.5.17. Site 17 miscellaneous

materials storage.

Figure 4.5.18. Site 10 miscellaneous

materials storage.

Figure 4.5.19. Site 8 miscellaneous

materials storage.

Figure 4.5.20. Site 6 miscellaneous

materials storage.

Miscellaneous large or loose items. The art rooms included in this study were

also found to be prone to another storage problem: a collection of large or loose

miscellaneous items amassed and placed somewhat randomly around the room or in

storage areas. These items tend to fall into three categories, but are not limited to them:

(1) pieces of furniture or equipment reclaimed from other areas of the school and

repurposed for new storage uses in the art room; (2) objects that appear to be potential

subject matter for still-life drawings or paintings; and (3) large class projects from previous school years and/or stacks of large artworks that are too large or too many to store on existing shelving. Figures 4.5.21-4.5.26 are examples of items that were found on the day of my site visits to six of the schools.

Figure 4.5.21. Site 15 loose items

storage.

Figure 4.5.22. Site 4 large item storage.

Figure 4.5.23. Site 14 loose items

storage.
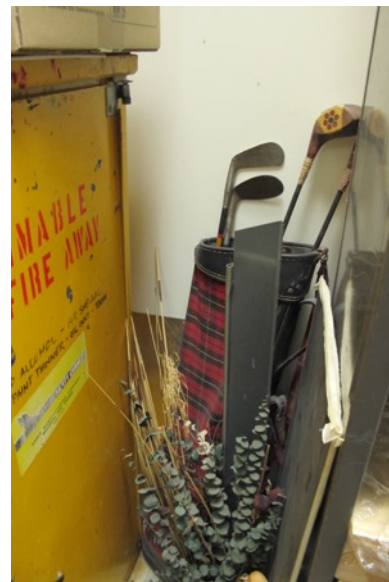
Figure 4.5.24. Site 9 loose items storage.

Figure 4.5.25. Site 10 loose items

storage.

Figure 4.5.26. Site 4 large item storage.

Storage Furnishings

Two storage furnishings ubiquitous to most studio art classrooms are found in one fashion or another in all but three included in this study. The data suggest that these common storage provisions are more problematic than not. Given the following examples of both, examples that are only a small sampling of others available from this study, it might benefit art teachers and their students if cupboard-style cabinets and flat files were reexamined as standard provisions in the design and furnishing of studio art classrooms.

Cabinet storage. Most art classrooms in this study have some form of single- or double-door cupboard-type cabinets, not dissimilar to those in kitchens and offices globally (Figure 4.5.27). The doors on these cabinets are wood or particle board-faced, unlike many science room cabinet doors, which are often glass or plexi-faced. This is of interest because it would appear that art room cabinets are not designed for visual access to the materials inside, whereas science room cabinets are. As can be seen in Figures 4.5.28-4.5.32, these cabinets were often found to be nearly empty, filled with a random selection of mismatched supplies or containers, or, conversely, were stuffed from top to bottom with a variety of materials. Those that were nearly empty appeared so

because the countertop below or above had become the central access point for distribution of materials that might otherwise be stored there. Those cabinets that were filled to capacity seemed to be nearly inaccessible for daily use. At Site 14 specifically (Figure 4.5.33), I wondered how the teacher manages to "shop" for materials in these cabinets. During informal conversations on the day of my visit, she admitted having a difficult time getting in and out of the child-sized cabinets (Interview Data, 2017), which were all tightly filled with a large variety of connected and disconnected art materials.
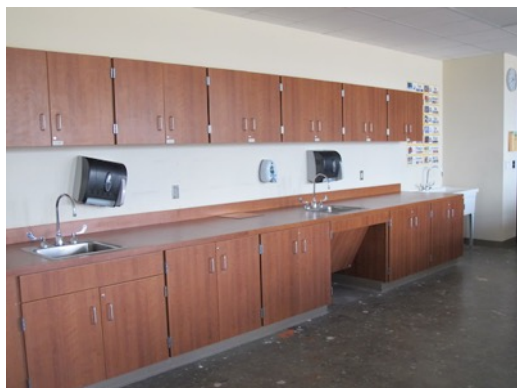
Figure 4.5.27. Site 6 built-in cabinet

storage.

Figure 4.5.28. Site 6 cabinet storage

(detail).

Figure 4.5.29. Site 4 cabinet storage

(detail).

Figure 4.5.30. Site 1 cabinet storage

(detail).

Figure 4.5.31. Site 14 cabinet storage

(detail).

Figure 4.5.32. Site 17 cabinet storage

(detail).

Flat files. To my knowledge, flat files were originally designed for large architectural renderings and blueprints, art posters, and other print media from the early 20th century. Sometime since then, they began to be used in art classrooms for large paper storage, art reproductions, and teaching posters.

Today, as seen in classrooms in this study, older flat file units built from steel or particle board, often found in older school buildings, are filled with large collections of teaching resources from before the digital era, which made them somewhat obsolete (Figures 4.5.36, 4.5.37, and 4.5.38). Newer art rooms have flat files that are typically made of wood or particle board and are usually comprised of one or two units within a larger built-in unit made up of variable sizes of drawers, cabinets, and slotted storage sections. If the teacher does not have a large collection of old art reproductions, she uses her flat files to store a variety of flat paper products or student 2D projects (Figures 4.2.33 and 4.5.34).

Site 12, along with the steel flat file unit that houses teaching resources and paper materials (Figure 4.5.38), purchased approximately 100 large-sized stackable plastic flat files for student use (Figure 4.5.35). These files are stacked in sets of 25, with 2 sets positioned next to each other on opposite sides of the room. Over the past 20 years, the weight of the stacks and the inevitable decay of their material quality have begun to cause cracks in the bottom files. These stacks are each leaning to varying degrees, although the participant teacher's husband did what he could to shore them up with two-by-fours several years ago. Figures 4.5.39 and 4.5.40 house what appears to be hard-to-reach teaching resources, old student work, and other flat papers, as they were blocked from access on the day of my site visit. It is not difficult to imagine that these files would be found in a similar state if I were to visit the classroom again today.

Figure 4.5.33. Site 18 flat file (detail).

Figure 4.5.34. Site 16 flat file (detail).
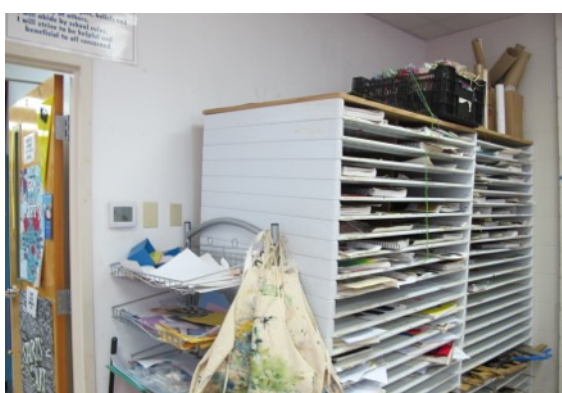
Figure 4.5.35. Site 12 flat files for student

works-in-progress.

Figure 4.5.36. Site 5 flat file for teacher

resources.

Figure 4.5.37. Site 4 flat files for teacher

resources.

Figure 4.5.38. Site 12 flat files for teacher

resources.

Figure 4.5.39. Site 14 blocked flat files.   Figure 4.5.40. Site 15 blocked flat files.

Works-in-Progress Storage

According to the art teachers in this study and others that I have spoken with

throughout my years in the field, one of the most difficult areas of storage in the typical

art room is that of students' works-in-progress. With the already small room filled with

materials, equipment, tools, furniture, and groupings of 20 to 25 or more students

attending classes roughly six times a day, the problem is compounded by the fact that

most art rooms are not built to accommodate storage for the numbers of projects on

which students are working at any given day and time. Because of a lack of allocated

space for project storage in some form or fashion in most classrooms included in this

study, at least one teacher limits her students' work to 2D projects only because the

classroom and storage area are not able to facilitate careful storage of 3D pieces. There

were two or three other teachers who told me that they undertake 3D projects

occasionally, but they mentioned that it was a struggle to work out the storage of the

works-in-progress, so they typically limit the scope of 3D projects and the amount of time

the projects will be stored in their classrooms. Either way, each of the 18 classrooms

represented here has a unique design and arrangement and, with the possible exception

of Site 3, none have "adequate" or "enough" storage or designed spaces to amply house

both 2D and 3D works-in-progress.

Two-dimensional works storage. It is predictably easier for teachers to store 2D projects in art classrooms, simply because these projects are flat and easily stackable by class. During my site visits, I observed that all 18 teachers have devised their own methods for storing 2D works-in-progress, regardless of what type of storage units are or are not available in the space. There are some commonalities to the storage method, but even if two teachers have the same piece of furniture in which to store their students' work, each one customizes her storage system to her own liking.

Sites 18 and 15 provide examples of how teachers use tall storage closets for 2D project storage when they prefer to use this piece of furniture for 2D works. Because Site 18's classroom serves elementary-aged students, the teacher organizes her students' projects by class on shelves in a tall cabinet. Each shelf is labeled with the class teacher's name, and projects are stored accordingly (Figure 4.5.41). Site 15's classroom serves middle school students, and the teacher assigns one shelf to each class. Students are responsible for storing their own work in the closet, which results in a less ordered closet than the one observed at Site 18, so the projects stored in this tall cabinet are not particularly well organized (Figure 4.5.42). There is, however, a studio routine activated in this middle school art room that supports independence and mutual responsibility, an age-appropriate studio habit that is not presently used in the elementary classroom at Site 18.

Figure 4.5.41. Site 18 2D project storage.

Figure 4.5.42. Site 15 2D project storage.

Sites 1 and 14 are elementary classrooms that use flat files to store 2D projects. Site 1's drawers are labeled for particular classes (Figure 4.5.44), while Site 14's are placed by grade levels in drawers and then subdivided by folded construction paper portfolios (Figure 4.5.43). Site 5's teacher uses a tall, wide color-coded shelving system to store 2D works (Figure 4.5.45). The school operates on a schedule organized by day-of-the-week, something I have rarely seen during the course of my career. I was a bit confused by the color-themed schedule, especially when the teacher told me that her art classes are attended by students who are on the same grade level but may not necessarily be in the same general class as all the other students. The color-coded shelving unit in this classroom is somehow coordinated with the scheduling system. Finally, Site 3 is a private high school that uses a vertical file system for individual students to use to store their own 2D works (Figure 4.5.46). For the most part, this system seemed to be the most self-contained and easily managed of the ones I observed in high schools during this study.

Figure 4.5.43. Site 14 2D project storage.

Figure 4.5.44. Site 1 2D project storage.

Figure 4.5.45. Site 5 2D project storage.

Figure 4.5.46. Site 3 2D project storage.

Three-dimensional works storage. 3D works-in-process are sometimes so difficult to arrange and keep in order that some teachers limit working in 3D, while others avoid it altogether. Most often, teachers will work with one age group or grade level at a time in 3D and send those projects home before another group begins working in this format. And because most art classrooms do not have pre-assigned 3D storage built in, teachers were found to be resourceful, limiting, or very creative in the ways they worked through the problem so that their students could work three-dimensionally. Site 17's teacher uses a choice-based curriculum for her second through eighth grade students and, for the most part, limits the 3D projects to building structures with cardboard. I was not able to fully understand exactly how her storage philosophy worked out during my one-day site visit and class observations, but Figure 4.5.47 shows how these projects are stored from one day to the next. It does not appear that the works are organized by

class, but there may be a system in place that was not immediately visible on the day of my visit. On the other hand, Site 3's students working in 3D are able to store their smaller projects in one of the 21 storage cabinets available for their use (Figure 4.5.48). This unit stands just adjacent to the 2D vertical storage mentioned earlier. Conversely, at Site 14, one class session was working in a partial 3D format on the day of my site visit. The space does not have much room available for 3D storage, so it appeared that the teacher limited the clay project that day to something that could be made in one class session and would be easy to stack for the duration of the necessary drying time (Figure 4.5.49). The only 3D projects visible at Site 15 on the day of my visit were already completed and on display. With the entire school's hallways lined with student art, this was the only school in the study that appeared to "store" works of art by immediately exhibiting them (Figure 4.5.50). Site 4's teacher created dedicated spaces for her students' 3D works-in-process. Near the door to the classroom, there is a built-in flat file system whose shelves are now collapsing. The shelves would otherwise be about two inches apart, but because she has not been able to get a facility work order fulfilled to fix the unit, she has begun using the gaps between workable shelves as a space to store 3D projects in labeled shoe boxes (Figure 4.5.51). The teacher has also purchased a tall, lightweight, metal shelving unit on casters to store some works-in-process (Figure 4.5.52). On the day of my visit, when the sixth-grade classes came in, she wheeled the unit to the center of the classroom so that students could quickly access their work.

Figure 4.5.47. Site 17 3D project storage.

Figure 4.5.48. Site 3 3D project storage.

Figure 4.5.49. Site 14 3D temporary

project storage.

Figure 4.5.50. Site 15 3D project 'storage'

via exhibition.

Figure 4.5.51. Site 4 3D project storage.

Figure 4.5.52. Site 4 additional 3D project

storage.

Sinks

The NAEA offers 13 specific recommendations for sinks in studio art classrooms (see Appendix B), second only to the number itemized for storage. This is due, in part, to the significant role that sinks play in the art studio and the work that takes place there. Of particular interest are the findings related to the number-of-students-per-sink ratio, age/height needs and related complications, confirmation of the need for waterproof work surfaces adjacent to sinks, and matters related to the purpose and maintenance of clay and plaster drain traps.

While 16 sites in this study have sinks available in their studio art classrooms, 10 of those sites have fewer sinks than are recommended for the number of students served. The NAEA recommends 1 sink per 10 students; this is not simply an ideal number, but an essential number, based on what I have learned both in my years as an art educator and through the class observations that were a part of this study. The class observations showed that any classroom situated with three to four obstruction-free individual sinks, or available taps along a trough-style sink, hosted a noticeably more fluid traffic pattern during studio activity and cleanup time, allowing teachers and students to clean up more quickly each class period. Sites 1, 3, 7,9, 11, and 12 meet or

exceed the number of recommended sinks per 10 students, but Sites 7's and 11's

pathways to and from their sinks are at least moderately obstructed, resulting in a slower

moving traffic pattern during the cleanup and studio activity segments of the class

session. Ten sites have one to three sinks, with student numbers ranging from 25 to 41.

And finally, two sites do not have a sink available to students, but Site 10 does have a

very old sink located in what is now the teacher's office.

Not limited to the high or low number of sinks per 10 students in a K-12 studio

space, there are a variety of other noteworthy *sink situations* that affect creative activity

in the studio classrooms in this study, for one reason or another. The individual case

stories are as varied and nuanced as each participating classroom teacher and the

space in which she works. *Site 5, for example, has a such a particularly unique sink*

situation that will be discussed at length in the Unintended Consequences section of this

chapter.

Sink *Provision* Situations

Of the two classrooms whose sink situations in particular fall on the meager side

of the spectrum, Site 2 has no sink inside the classroom; nor does it have one in the

small storage room/office directly adjacent to the classroom. Instead, each morning, the

teacher takes a five-gallon bucket of dirty water from the previous day's work from

underneath a small table, carries it around the corner from her classroom to a

maintenance closet, unlocks the door, and dumps the contents into the utility sink there.

She then retrieves two one-gallon-sized jugs from her classroom and fills them with

clean water from the same utility sink. he returns to the classroom and places the two

gallons of clean water on top of the table and the now empty five-gallon bucket back

underneath (Figure 4.6.1). Throughout the day, as water is needed for projects, she

pours the water from the gallon jugs into water bowls that are also located on the table

and distributes to them to her students. When each bowl of water needs refreshing,

either she or her students pour the dirty water into the five-gallon bucket, and she refills the bowl with new clean water. If little hands need to be washed at the end of the class period, she pours water over pre-cut paper towels, squeezes the extra water back into the bucket, and distributes the damp paper towels to each student who needs one.

Site 10 technically has a sink, but it is not available for student use. The school building was built in the first half of the 20th century, making the traceable history of the use of this classroom somewhat difficult to ascertain. It is apparent, however, that over the years, several "renovations" or phases of repurposing of the room and its furnishings have taken place. Most significantly, at some point, an "office" was built into the back far right corner of the room. This office houses the only sink in the room, which appears to be made of soapstone, is about two feet in height, and looks to be as old as the building itself. The teacher stated to me during my site visit that "at least it qualifies as a sink," available to her for use in her classroom, something for which she is extremely grateful (Figure 4.6.2). Because of its location accessibility, age, and height, the teacher deems it off-limits to student use, so she distributes hand wipes during cleanup time—and uses the opportunity to have students wash their table area with the same hand wipe when they are finished cleaning their hands.

Figure 4.6.1. Site 2 "sink"—five gallon

bucket and 2 milk jugs.

Figure 4.6.2. Site 10 sink in teacher's

office.

Sink *Use* Situations

While the two sinks mentioned above are on the lower end of the spectrum for convenience and efficacy, 10 of the other sites observed in this study have fewer than the desired number of sinks per student; at least 2 have height issues, or have accessibility issues, making them inconvenient to use.

It became apparent during this study that the teacher's perspective is a key factor in whether she chooses to use the sink for students or whether she decides that she alone will use it and will not allow students to. Sites 8 and 17 have two and one sink, respectively, neither meeting the student ratio recommendation of 1 sink per 10 students for their studio classroom. Because of the very narrow nature of the classroom in Site 8, even with two sinks available for student use (Figure 4.6.3), there is no easy way for 25 to 30 students to line up to use the space during studio activity and cleanup times. The teacher sees this as untenable and chooses, therefore, not to allow students to use the sinks; she offers hand wipes for cleanup instead. Site 17 (a charter school constructed in a large urban low-income community within the last five years), on the other hand, has one sink in the back far left of the very small classroom that is often filled with up to 24 students per class. This situation creates another set of accessibility problems that the teacher deals with in her own way (Figure 4.6.4). Unlike the teacher at Site 8, she does

allow students to wash their hands in the sink during cleanup and provides a makeshift

stepstool for the younger students to use in order to reach the sink. One student and/or

the teacher distributes soap and towels to each student as they stand in line to use the

sink after each lesson. This setup, as I observed during the site visit, is difficult because

of the height and safety issues for little ones, the tight location of the sink, the need for

hand distribution of soap and towels, along with the need for this sink to serve a large

number of students at the end of every class session.

Figure 4.6.3. Site 8's two sinks.

Figure 4.6.4. Site 17 sink in the far back

corner.

Throughout the course of visiting each of the 18 sites for this study, it became

evident that the area of age/height-appropriate equipment and furnishings is an issue for

elementary classrooms specifically. Most children are tall enough by the time they arrive

in middle school to reach the average "adult-sized" sink. But the size difference between

preschoolers, kindergartners, and fifth graders is substantial.

For example, Site 1's two studio art classrooms serve students from preschool

through fifth grade. When the new lower school facility was opened nearly six years ago,

the designers installed a trough-style sink that was equipped with four motion sensor

taps or faucets. The sink height is around 30" from floor to countertop. Either the school

itself or the designers included a two-step loose stair that can be moved from faucet to faucet as needed (Figure 4.6.5), but two problems exist: (1) the teacher stated during the site visit that it would be very helpful to have at least another two-step stair on hand so that her classes of preschoolers and kindergartners are able to work at the sink side by side and not one-by-one; and (2) given the motion sensor that facilitates the on and off function of water flow to each faucet, the smallest of her students experience quite a bit of difficulty in positioning themselves to reach up to activate the sensor. As stated earlier, the original function of the sink set-up included four motion sensor taps. The teacher also mentioned that once she began teaching in the brand-new space nearly five years ago, it did not take long for her to conclude that having sinks controlled by motion sensors alone would not work "at all" in an art classroom. Given the amount of time an art teacher spends at her sink, cleaning, soaking, dispensing water into jars and cups, this teacher became quickly frustrated by having to keep waving her hand across the sensor to keep the water flow going. Although it took about six months to accomplish, the school maintenance department was able to change one of the faucets to a manual on/off function—much to the teacher's relief!

Site 17's sink, mentioned earlier, was installed at a typically adult-sized height. The teacher uses a sturdy milk crate as a stepstool for her younger students, so that they are able to reach the faucet (Figure 4.6.6). Although the milk crate appears to be an older sturdy one, it does still raise concern about its overall safety for use as a stepstool for young children.

Figure 4.6.6. Site 17 milk crate stepstool.

Figure 4.6.5. Site 1 preschool

stepstool.

Other Sink Situations

ADA compliant sinks. These sinks situations are addressed at length in the Universal Design section of this chapter.

Hot and cold running water. Of the 16 classrooms that have sinks in this study, all but two teachers report having both hot and cold running water. After spending over 20 years cleaning a large variety of art materials out of cups and bins and more, I feel it noteworthy to mention this seemingly extraneous sink situation that is found, instead, to be an essential tool in the art room.

Adjacent waterproof countertops. It might seem obvious that the NAEA would recommend a waterproof surface to surround the standard heavy-duty stainless-steel sinks suggested for use in studio art classrooms. As matter of fact, I was beginning to take this particular set of recommendations for granted, given that Sites 1-17 were equipped with this feature … until I visited the final and most recently occupied site participating in this study. Site 18 is brand new and still squeaky clean. In all the studio art classrooms at this newly constructed arts-focused campus, the designers chose to

install a two-faucet trough sink on a short section of wall, leaving the pipes and filters below exposed, ostensibly for aesthetic purposes (this will be discussed further in the Unintended Consequences section of this chapter). In the specific participant classroom used for this study, within a couple of feet of the sink wall is an adjoining wall with built-in cabinetry. When the teachers began working in these classrooms, with these sinks, what was missing became quickly apparent … the adjoining waterproof countertops that are found in all of the other studio art classrooms in this study. To solve this problem for themselves, most of the teachers in the department have positioned sturdy plastic carts next to the "free-standing" sinks in their classrooms, and have situated the carts with plastic dish drying racks used to drain water bowls, etc. (Figure 4.6.7). The school's designers or builders did place open shelving above the sinks, but given the teachers' collective cart solution, the installed open shelving apparently does not work in the same way an adjoining waterproof countertop would.

Figure 4.6.7. Site 18 cart used as counter

space.

Clay and plaster drain traps. Roughly half of the classrooms in this study have at least one clay/plaster drain trap or filter system installed and connected to the plumbing exiting the sink basin (Figure 4.6.8). Most ADA sinks do not have room for this device due to the clearance needed for wheelchair access; however, on occasion, the

plumbing from it or an adjacent sink is rerouted so that water carrying any art medium

sediment will still be able to travel through the drain trap/filter. It is apparent through the

findings of this study that some architects or school facilities planners have knowledge of

or are able to recognize the need for the installation of these pieces of equipment in

studio art classrooms, because eight classroom sinks are equipped with them. At least

one teacher that I interviewed for this study was not aware of what the white boxes

under her sinks are (Interview Data, Site 4 Teacher, 2016), and all of the others seemed

at the time of the site visit to be unaware of either the purpose or care requirements for

the white boxes underneath their sinks. I never had one in the classrooms that I worked

in while teaching K-12 art classes, nor was I aware at that time that they existed.

(Thankfully, I at least knew not to allow my students to rinse plaster-of-paris or other

particle-rich media down the open drain.) As I have researched this particular piece of

classroom equipment recommended for studio art classroom sinks, I found what one

manufacturer recommends as a care plan for these devices: It will be necessary to

check the operation of the Plaster Trap on a weekly basis for the first 6-8 weeks

following commissioning. This will allow you to assess the on-going schedule of

maintenance (Canplas Plumbing Solution, 2018). The overwhelming consensus of

practice found in this study, however, is that once the filter/drain trap is installed in a

studio art classroom, usually upon installation of the sink itself, the filter and other

involved mechanisms are only cleaned or dealt with when the sink is clogged and

someone from maintenance comes to ascertain the problem. Further, two or three

classroom teachers whose sinks are equipped with clay/plaster drain traps have

invested in plungers to deal with sink clogs, rather than waiting on someone in

maintenance to come and unclog the drain (Figure 4.6.9). Also, this study found that

after the trap/filter is installed and left unattended for a while, it can get lost behind all of

the *stuff* stored under the sink, as can be seen in Figure 4.6.10.

Figure 4.6.8. Site 13 clay/plaster drain trap.
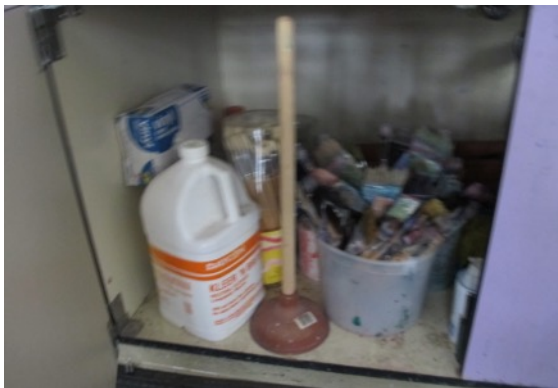
Figure 4.6.9. Site 15 sink plunger.

Figure 4.6.10. Site 8 clay/plaster

drain trap.

Ventilation and Safety

The NAEA's recommendations in the areas of safety and ventilation address

several factors of importance in maintaining a safe studio art classroom. Tripping

hazards, hazardous materials storage, and ventilation needs are among the issues

raised. In general, it is difficult to determine how well a specific art classroom falls in line

with all of the recommendations given, particularly because some of the safety

provisions and protocols need to be confirmed by a deeper look at historical documents

or through interviews with school facilities personnel and administrators. For instance, one can reasonably assume that most schools built in the last 20 years will meet safety standards for fire codes, ventilation, and hazardous waste storage and disposal. But in the course of conducting this research, red flags have popped up in all of these areas. Are access doors up to fire code? This is assumed, but should it be? What art materials need to be classified as hazardous chemicals and stored in flame-resistant cabinets? How should various solvents, aerosol cans, and other single containers of *this or that* be stored or disposed of by the average art teacher in the average art classroom? How concerned should the art teacher or her school be about OSHA-related materials that she might need only occasionally but stores indefinitely in limited quantities in her classroom? Each teacher and school that participated in this study handles these situations differently, and each was found to have either a hit-or-miss approach to safety issues, or choose, at least in terms of hazardous chemicals, to maintain a predominantly non-toxic studio art classroom. However, each participant teacher who aims at having a non-toxic classroom, by admission, purchases the occasional item that is labeled as toxic, such as cans of spray adhesive or spray paint, and typically stores them somewhere in the art room indefinitely.

Ventilation

Windows are discussed as a ventilation option or provision because they potentially make a difference in art classroom ventilation. What the NAEA refers to as general exhaust systems, or those that are "sufficient to handle fumes, odors and dust generated by art activities," was difficult to determine, given the indistinct nature of general ventilation capabilities in most school buildings.

Site 1 is located in a large urban setting where the school administration has directed teachers not to open their classroom windows. However, the art teacher participating in this study said that she sometimes breaks the rule, even if only for having

hot, sweaty fifth graders inhabiting the space right after recess or physical education classes. Sites 2 and 9 have no windows for ventilation, and Site 7's window is installed about ten feet above the floor, so it is not a quick solution for immediate ventilation should the teacher want or need fresh air ventilation. Other classrooms with windows are equally divided between those that can be opened and those that cannot.

As to specialized ventilation for kilns, specifically, this study found that every studio art classroom with an adjacent or on-site kiln room was well-equipped with a localized ventilation system (Figure 4.7.1), and Sites 3 and 11 also have at least one ventilation hood or spray booth available for use with chemicals or processes that require extra care (Figure 4.7.2). Site 11's hood, however, at the time of my visit, was covered with an indiscriminate group of items, thus rendering it inoperable.

Figure 4.7.1. Site 14 kiln ventilation.   Figure 4.7.2. Site 3 safety hood.

Safety Equipment

Site 8 has the unique safety feature of a wall-mounted red box that contains a **fire blanket** inside the storage room that houses the kiln (Figure 4.7.3). The kiln itself is surrounded by large bags of paper egg cartons, cardboard paper towel tubes, a roll of

fabric, and other miscellaneous flammable items (Figure 4.7.4). I assume that the teacher makes sure these items are not near the kiln when she uses it, but it seems likely that fire department officials would not be comfortable with this situation.

Figure 4.7.4. Site 8 blocked kiln area.
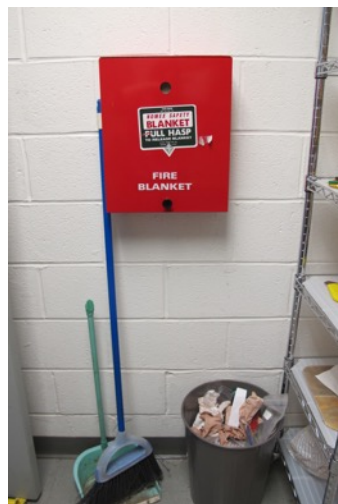
Figure 4.7.3. Site 8 fire blanket.

Nine studio art classrooms in this study are equipped with **fire extinguishers**, as the NAEA recommends, and nine are not. When I asked the teacher from Site 10 if she has one located in her classroom, she looked at me with astonishment and stated that her school district, located in a large urban area, does not allow fire extinguishers in classrooms. She said they position them in the hallways around the school, but not in the art room. This school building does not have a kiln on site and is otherwise a non-toxic environment, so a fire extinguisher may be considered nonessential for this space. Site 8 is located in the same urban district and does have a fire extinguisher located in the room, but there is a kiln in its storage room.

Another safety detail that is not found to be addressed in participant classrooms, as recommended, is the inclusion of **first aid kits**. In general, most teachers said that they have band aids on hand, or, if the school provides one, they may also have a very simple blood-borne pathogen safety kit on hand, which includes nitrile exam gloves,

disinfectant towelettes, and paper towels in a biohazard bag. Otherwise, during the site visits for this study, in-class first aid kits were not found to be present in any the art classrooms in this study.

The NAEA recommends that studio art classrooms be equipped with **multiple electrical outlets** in order to avoid tripping hazards. These hazards typically occur when extension cords become the standard solution to the problem of too few outlets and too many pieces of equipment and technology that require electricity. Depending on the district and its policy positions on prioritizing the modern-era goal of every student having a laptop, iPad, or other tablet to enhance learning, the optimal number of outlets available that would amply supply electricity to all devices in the room is variable. Additionally, how and when each school might make the transition to the inclusion of student devices in the classroom (whether they be personally owned, or school/district-issued) creates other potential safety issues regarding the provision of electrical outlets.

One solution to the problem of multiple devices needing outlet access has also apparently introduced a new tripping hazard to two schools in the study. Floor based electrical boxes are installed in Sites 3 and 6 (Figure 4.7.5); both are high schools where each student has been issued a personal laptop or tablet. The two participating teachers report that the floor boxes do not stay flush to the floor and regularly create tripping hazards, potential fire hazards from dust and debris collecting in the crevices, and also cause fuse problems when multiple items are plugged into these outlets.

Site 18 is the newest classroom in this study and is the only one whose developers installed ceiling-mounted pull-down electrical outlets, an outlet delivery method often found in makerspaces and heavy machinery studios (Figure 4.7.6).

Figure 4.7.5. Site 3 floor-based electrical outlets.

Figure 4.7.6. Site 18 ceiling mounted electrical box.

Site 3 is the only school out of all 18 that is equipped with the recommended **emergency eye wash station**, with the bonus of an attached **emergency shower station**. However, this safety station, as seen in photograph (Figure 4.7.7), is also currently serving as a storage space for several items. If the need ever arises for access to either of these safety provisions, the objects stored there will need to be moved quickly.

Figure 4.7.7. Site 3 eyewash and shower station.

Figure 4.7.8. Site 6 flame resistant storage cabinet.

The NAEA *Design Standards* (2015) recommend that all toxic or hazardous materials be stored in flame resistant storage cabinets (Figure 4.7.8), that some chemicals be stored separately from others, and that all are disposed of properly when they are no longer in use. The five art rooms that do have flame-resistant cabinets in their storage rooms usually have only one; and the NAEA does not give guidance on which chemicals, specifically, should be stored separately. The fire-resistant yellow cabinets at Sites 4 and 9 are blocked by carts, shelving, and miscellaneous objects (Figure 4.7.9), which seems problematic to the notion of keeping the chemicals stored inside safe, separate, and well-ventilated. In terms of disposal of hazardous materials such as aerosol cans, inks, solvents, or other potentially hazardous items, teachers reported that they either take these items home for disposal or they simply store them indefinitely for lack of a better alternative or more specific plan.

A related issue is the *Design Standards'* (2015) recommendation that art teachers have a "knowledge and use of manufacturer's specific electrical and ventilation requirements for certain equipment." Most participant teachers confessed that they are not as familiar with these requirements as they would like to be, although it was apparent in our conversations that they are at least aware of *potential* issues. During conversations about this topic with each teacher, it appeared that ongoing conversations with school administrators and facilities personnel were nearly or completely non-existent, so it was difficult to ascertain whether the schools themselves had a good handle on health and safety issues for the broader school building and community. Three sources for helping schools and art teachers establish health and safety plans for the larger school community, and the art room specifically, are: (1) the Environmental Protection Agency, (2) the Occupational Safety and Health Administration, and (3) the Art and Creative Materials, Inc. Each of these organizations either regulates or makes recommendations for identifying hazardous or toxic materials, storing them appropriately, and using them safely.

Figure 4.7.9 Site 4 blocked flame-resistant

storage

Teacher Offices and Work Spaces

In the area of teacher work spaces, the National Art Education Association recommends that teachers have a separate lockable work space or office, not included within the square footage of the actual studio art room. It is recommended that this space should be at least 120 square feet and should have several file cabinets, bookshelves, a teacher's desk and chair, and, if possible, a large work surface separate from the teacher's desk. Additionally, the teacher should have a computer, wireless internet access, a telephone equipped with an external line, and multiple grounded electrical outlets with surge protection. A glass-enclosed space is preferred, so that teachers can have visual access to students at all times.

Two things to keep in mind:

- Given that these recommendations were published in 2015, the NAEA does not address 21st century learning approaches in detailing how teacher office space/s and administrative needs have changed or might change in light of

the drastic advances in pedagogical technologies used in the classroom

since the organization first developed these recommendations in 1994 (e.g.,

the recommendation for several file cabinets to be provided in the teacher's

external office seems a bit out of date).

- None of the studio art classrooms participating in this study have a glass-

  enclosed office immediately adjacent and visible to and from the studio art

  classroom.

External Offices

Two sites have separate teacher offices in close proximity to the art room, but not

directly adjacent to it. Two others can technically be considered to have "separate and

directly adjacent" teacher offices, but neither of these spaces was constructed to be an

art educator office, nor are they equipped with the specific features the NAEA

recommends.

Site 13's office is located off of the corridor outside the classroom but is still

situated within the small "art wing" in this large suburban public high school serving a

middle-class community. It is the only site whose art educator office is closely in line with

the NAEA's recommendations. For example, the room approximately meets the

recommended size in square footage and has a desktop computer, built-in flat files and

cabinets, along with a countertop work surface (Figure 4.8.1). The teacher has chosen,

however, to organize many of the items she stores here in banker-style boxes, thus

leaving the built-ins empty and, in a sense, decommissioned (Figure 4.8.2). The banker

boxes are stored on top of the countertop work surface, along with some work stored in

a retrofit vertical storage unit (Figure 4.8.3). As a result, this use of the countertop space

diminishes its role as work surface. In relation to the office's proximity and visual access

to the actual classroom, although it is located just down the hall, on the day of my visit I

observed that when a student or the teacher needed to use the teacher's office desktop

for printing, either or both the teacher and the student left the classroom for several

minutes at a time in order to resolve a problem with the printer.

Alternatively, Site 9 has a separate communal office space where eight teachers

share approximately 340 square feet of space, with one or two sharing desks (Figure

4.8.4). This office space is also situated within a dedicated "art wing" of a large suburban

public high school, and its perceived proximity to the five or six classrooms in the

secluded wing seems to be different than if it were located in a more open space

elsewhere in the school, were the art wing not to be enclosed by stairs and a collective

separate entrance.

Figure 4.8.1. Site 13 educator's office, closest to NAEA standards.

Figure 4.8.2. Site 13 unused flat files (detail).

Figure 4.8.3. Site 13 adjusted educator

office storage.

Figure 4.8.4. Site 9 group educator office.

Site 10's office might technically be considered the only art room in this study with a separate directly adjacent office that has at least partial visible access to and from the art room. However, because this space was originally included in the square footprint of the full classroom, and the historical context and reason/s behind its being partitioned off into an office are unknown, this segment of space inside the art room feels more makeshift than a dedicated office for the art teacher (Figure 4.8.5). Site 2, similarly, has a separate adjacent space that the teacher has situated, in part, as a small art office. The space is considered by most in the school to be a storage closet but currently serves as one-third teacher office and two-thirds storage closet because the teacher has decided to arrange it in this way (Figure 4.8.6).

Figure 4.8.5. Site 10 educator office.
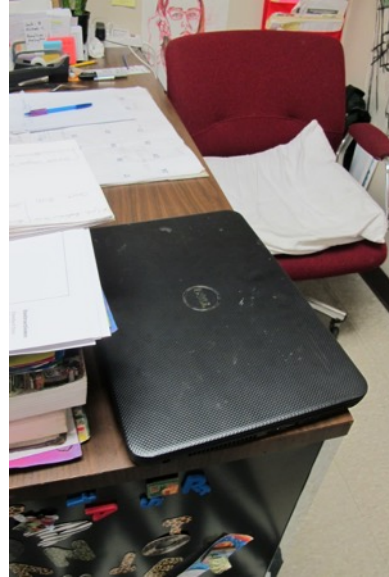
Figure 4.8.6. Site 2 office area inside

storage room.

Internal "Offices"

None of the remaining 14 sites have external office space for the art educator. Instead, the studio art classroom itself typically houses a desk, computer, and a few of the other of the NAEA-recommended items, depending on what the school administrators, facilities personnel, or art teacher deems suitable or makes available. Depending on the school culture and/or her personality or training, the amount of space the art teacher's desk area consumes is variable, ranging from negligible up to nearly 100 square feet.

Given that most of these art classrooms are already significantly smaller than the recommended square footage for the number of students engaged there, the consequence of having to locate the teacher's desk within the classroom is often inequities of space, either for the students or the teacher.

Inequities of space for the students. The following examples will be discussed at length below, but when the teacher's internal desk area appears to grow in square

footage over time, as observed at Sites 4, 11, and 14, as they are located inside classrooms that are already smaller in footprint than the NAEA recommends, the amount of available space for student use and comfort is reduced. At Site 4, the classroom is 712 square feet and houses up to 40 students during a class session. The teacher's desk spreads across the back-right corner of the classroom and takes up approximately 80-100 square feet of the total space. Thus, up to 40 students are given approximately 15 square feet each instead of the 55 recommended by the NAEA.

Inequities of space for the teacher. At Site 17, the teacher has no desk and no chair to sit in. There is no place for her to work from, other than to stand at the counter in the back of the room, where she uses about 3 feet of space for her laptop, a paper cutter, tiered file holder, and a few office supplies. The area is labelled with a sign that says, "TEACHER WORK AREA: *i.e., leave my stuff alone!"* (Figure 4.8.7).

Site 18, opened in April 2017, houses teachers' desks in the art wing that are minimalistic in configuration, both in terms of the aesthetic of the desks themselves, and in terms of the items stored there (Figure 4.8.8). This is likely an intentional reduction of the art educator's desk space, possibly due to the school's interest in moving toward 21st century learning approaches while fostering a clean and simple aesthetic in this new building. A different teacher in the art wing added a table on wheels to the originally purchased small desk to create an extended L-shaped desk for herself (Figure 4.8.9), while the participating teacher's desk had been supplemented by a matching one in the adjacent storage room—this one a little less organized and with a few added personal touches that often adorn teachers' desks (Figure 4.8.10).

Given these pretty immediate enhancements to the teachers' desk in a newly designed space, and the examples of other participating teachers' desks in older classrooms, such as Sites 4, 11, and 13, it seems reasonable to assume that the minimalist style desks at Site 18 will eventually be modified and grow in physical footprint over the next few years. The older classrooms mentioned above have led me to

identify a few factors common to all art educators' "offices" in this study, but most readily

seen in these three: (1) that each teacher's desk is as unique as the teacher herself; (2)

that her classroom just might be her castle; and (3) that, like a home, the longer she

stays in one classroom, the more *stuff* gathers and stays there.

Figure 4.8.7. Site 17 educator countertop

office space.
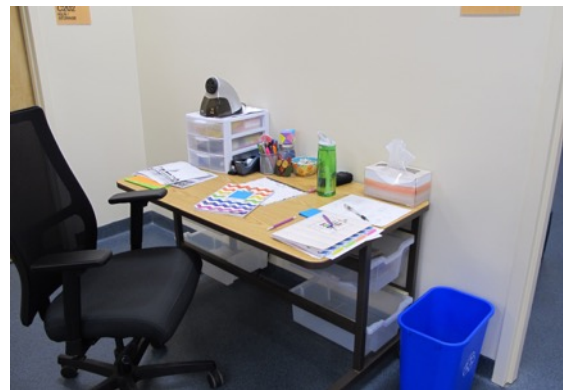
Figure 4.8.8. Site 18 in-class teacher

desk.
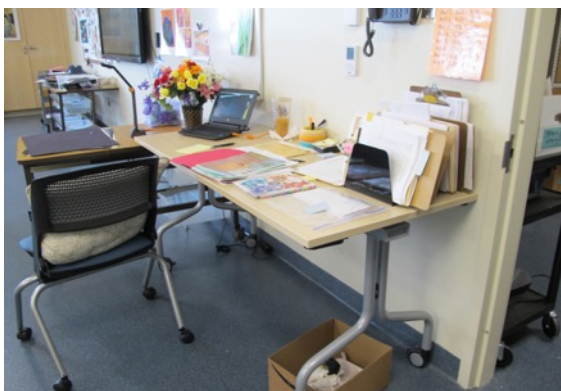
Figure 4.8.9. Site 18 alternate teacher

desk (adapted to an 'L' shape with

additional larger table placed on the right

side).
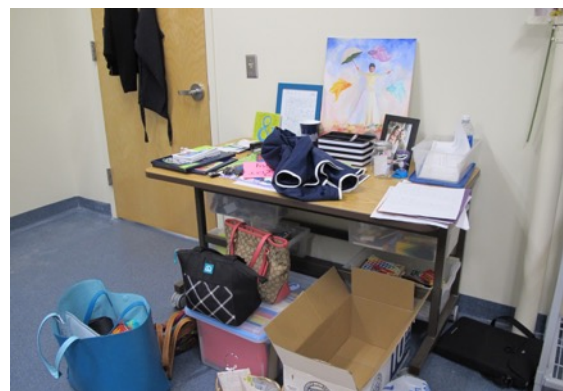
Figure 4.8.10. Site 18 "auxiliary" teacher

desk in storage room.

Each teacher's desk is as unique as the teacher herself. Site 4's teacher

desk area is a clear example of the notion that each teacher's desk is as unique as the

teacher herself. The teacher here has created a corner nook for herself in the classroom, which takes up approximately 80 square feet of the overall 712 square feet of space that makes up the art classroom. She has used contact paper to decorate the desk top and side panels in complementary patterns, an aesthetic choice that she applies to various other surfaces throughout her classroom. There are objects in her "office" area that suggest her personal style: a potted plant, a mirror, the monkey-face basket on the corner of her desk, the pillow on her chair, personal notes and drawings from students displayed on one wall, and the chandelier prop that hangs above her desk, to name a few (Figure 4.8.11). There are functional things on her desk as well, of course, such as a phone, document camera, work papers and files, office supplies, etc. While this teacher has customized her desk area more than some others in this study, most other participating teachers' desks also demonstrate that teachers enjoy personalizing their space and offering a glimpse of their interests, families, and love of their students when they create nooks like this within the walls of their classroom.

Figure 4.8.11. Site 4 teacher desk area.

Her classroom just might be her castle. Site 14's teacher's desk is one that favors the notion that the classroom just might be the teacher's castle. This teacher in this art room, like the teacher at Site 4, has also claimed a corner nook from which to

negotiate her day and manage her "castle." This semi-enclosed space (partitioned off by the positioning of several tables) is about 50 to 80 square feet in dimension and appears to house more administrative-oriented items than Site 4, but the skeleton and papier-mâché elephant located in the front of the desk are decorative additions that, in a figurative sense, delineate the area as "hers" (Figure 4.8.12). This is the only classroom in the study in which approximately 50% of the classroom space could be considered "hers," as opposed to what might otherwise be functionally accessible to students. Students are almost exclusively allowed to move about in the center of the classroom only. There is a front carpet area located between the center-front wall-mounted Smartboard and a demo mirror station from which they see demonstrations and discuss the day's lesson. After the initial discussion, students move to their tables in the center of the room where basic supplies such as pencils, erasers, and glue are stored in a container on a small table adjoining the larger work table. Any additional lesson-specific supplies are self-distributed from the demo table or by the teacher. The only other spaces the students might need to travel to are a table in the near-back center at which the teacher might oversee a particular bit of the day's lesson, or the sinks for washing their hands. Every other space in the classroom, again about 50% of the space, appears to be off-limits to students, notwithstanding that the cabinets and countertops on the left side of the room are built for child-sized bodies (Figure 4.8.13).

Figure 4.8.12. Site 14 teacher desk area.   Figure 4.8.13. Site 14 child-sized

cabinets.

The longer she stays in her classroom, the more *stuff* gathers and stays there. Site 11 is an example of how much teachers collect over the years. It is difficult to tell, at this point, what actually constitutes the teacher's desk, since there are three tables and a corner unit that hold plentiful amounts of what I can only describe as "teacher things" (Figure 4.8.14). This classroom has been the teacher's domain since its construction nearly 20 years ago—she herself had a hand in its design, including the built-in storage units, fixtures, equipment acquisition, and the addition of other furnishings. It appears that the spread of her desk grew from a unit in the far back corner, to a desk addition at some point, then to an extra table, and now on to the front table, which is where she worked from on the day of my site visit.
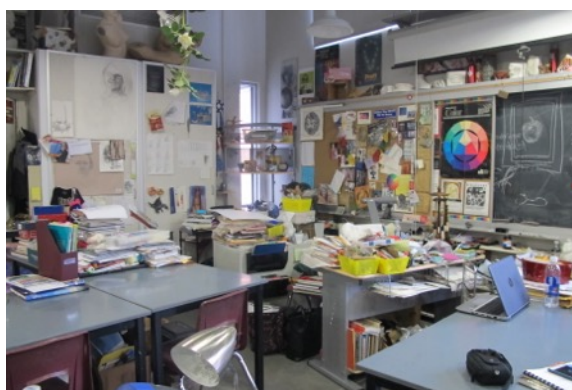
Figure 4.8.14. Site 11 teacher desk area (4 tables on the right).

Science lab tables serving as art teacher desks. Site 3's studio art classroom is under 10 years old and was included in the design of a new wing addition for an upscale suburban private school. The room and adjacent storage areas were originally designated to be a studio art classroom for high school art classes. At first glance, one can reasonably assume that the lockable built-in desk unit near the front of the room was originally designed to be the designated desk for the art educator managing this classroom (Figure 4.8.15). With two teachers working in the same space, however, what initially may have been intended to be primarily used as a demonstration table has now become a second educator's desk. This "desk" comes in the form of a large semi-circular science lab workstation (Figure 4.8.16). Gas valves and other science-related attachments along with the built-in epoxy resin sink sit unused for their original purposes. At the time of my visit, the sink was filled with office supplies and other miscellaneous items. Several stacks of student artwork, collected for grading, sit on the opposite end of the semi-circular station, and a variety of miscellaneous items sit on and around the approximately 12'x3' workstation.

Likewise, Site 5, which was originally a science lab but more recently designated as an art classroom, houses a large rectangular science lab station that appears to double as a teacher's desk. It stands at approximately 4' high (which requires a taller chair than usual) and is outfitted with six drawers, a cabinet, and an epoxy resin sink and countertop (Figure 4.8.17). The teacher has added two tables to the "front" of this science lab work desk in order to add square footage to her work area (Figure 4.8.18).

Figure 4.8.16. Site 3 science workstation

"teacher desk."

Figure 4.8.15. Site 3 built-in teacher desk.

Figure 4.8.17. Site 5 science workstation

"teacher desk."

Figure 4.8.18. Site 5 science workstation

plus two tables.

Outdoor/Patio Spaces

Some studio art classrooms in schools in the U.S. have direct access to outdoor patio/learning spaces, and the NAEA includes this potential art learning space as one of its areas of recommendation. Specific recommendations include access to water and electricity and an access door that meets standard fire codes. Additionally, the NAEA *Design Standards* (2015) state that an outdoor patio space directly accessible to the art

room offers "auxiliary space for display, a natural light source, and a space for individual and group work." These are the only stated recommendations, leaving a potential gap in what information is available for architects and school facilities planners to use in imagining and implementing an optimal outdoor space that might generate creative activity and art learning. Notably absent from the NAEA's suggestions are aesthetic considerations regarding intentional landscaping and the inclusion of green spaces that allow students and teachers to work in the context of *plein air* traditions, an experience valued by artists for centuries.

Eight of the schools I visited in this study demonstrate at least a fair level of intentionality toward the inclusion of "outdoor spaces" in their studio art environment, either through the inclusion of a patio directly accessible to or near the art room, or through ways of bringing the outdoors into the classroom, even in minor ways. Only a small selection of the teachers try occasionally to take their students outside as a class, or have an adjacent outdoor space that students are allowed to use as they need.

While five spaces, which will be described here, do have direct or near-direct outdoor access, in all but two of the schools, the use of these spaces has been limited for various reasons. Sites 7 and 11 seem to have the most intentional use of outdoor spaces as an extension of their classroom, even though Site 7 would seem the most unlikely candidate of all the schools in this study for this approach. It is a small public school for special needs students in a substantially large urban setting. The art room itself is small, so the teacher often includes short neighborhood walks (Figure 4.9.1) in her assignments, frequently having students take photographs of diverse aspects of the neighborhood and using those photos as an integral part of art-making experiences carried out inside the classroom. Due to the special needs focus of the school, this teacher has access to one or two teacher aides per class, as well as small class sizes, so the walks are easy enough to manage, something I observed when I accompanied the class on one of these walks during my site visit. Because the outdoor space used by

the art teacher is a city neighborhood, it should be noted that the NAEA recommendations are not germane to this site. The school was built without on-site access to a protected outdoor studio space and, if not for the teacher's own intentionality and specific strategies in utilizing the neighborhood for artistic endeavors, this school would be included among those without direct outdoor access.

Site 11 is nearly the direct opposite of Site 7's situation. The studio art classrooms are located in what the school labels "art barns," a name that conjectures a connection to outdoor activity. The school itself is located in a planned suburban community, which is built into a large environmentally protected woodland area. Its visual art studio classrooms are intentionally situated together in and around outdoor spaces so that the students and teachers in this environment often use the outdoor patios, picnic tables, and studio spaces as intuitive extensions of the indoor spaces. This site's setting consists of two dedicated buildings, each housing three classrooms, all of which exit directly onto the open patio space (Figure 4.9.2). Animation classes and a new virtual reality studio are housed in another building close by. The outdoor patio area is landscaped and also hosts a number of sculptures that have been built by members of the school community, either students, alumni, or faculty (Figure 4.9.3). One of the sculpture studios has a large garage door in addition to a regular-sized door entrance. The garage door has a heavy plastic stripped curtain attached so that the door itself can remain open throughout the day. This setup enables students to come and go between inside and outside work areas quite fluidly. Some pieces of machinery are placed on the patio on weather permitting days so that ventilation and noise levels are not prohibitive for students working inside. There are also kilns, sculptures in progress, sculptural equipment, welding tools, and other miscellaneous objects that are stored underneath a covered part of the patio (Figure 4.9.4). On the day of my visit, the participant teacher took her students on a "color walk" around the landscaped patio area and then went back into the studio classroom with her class to discuss color relationships (Figure 4.9.5)

and to work responsively through art-making. This site, as observed, appears to meet and exceed the NAEA's *Design Standards* (2015) recommendations, including offering "auxiliary space for display, a natural light source, and a space for individual and group work."

Figure 4.9.1. Site 7 neighborhood street.

Figure 4.9.2. Site 11 patio access from

all art rooms.

Figure 4.9.3. Site 11 sculpture pieces

around the art buildings.

Figure 4.9.4. Site 11 covered patio and

kiln area.

Figure 4.9.5 Site 11 color walk exercise.

Site 12 was built in the 1990s and was specifically designed to have direct access to an outdoor patio and use of an adjacent naturally wooded area. Large pane glass windows accent the outside space by sending generous natural light into the classroom and offering visible access to the adjoining woodlands (Figure 4.9.6). A large statue, cement picnic tables, and a walking path with a nature trail create visual areas of interest as well (Figure 4.9.7). As mentioned, initially this classroom was built to have access to and intentional use of the adjacent outdoor space; however, the teacher I interviewed for this study said it is not common practice for her students to work outside anymore. She said that sometimes they do, but often they do not. She has been an art teacher at this school since before this art wing was built nearly 25 years ago and helped the school make design decisions, such as the inclusion of this outdoor space.

Site 6 is a high school located in a large, award-winning "education village" in a rapidly growing suburban community. The "village" houses three schools—elementary, intermediate, and high school. Included in the design of the campus is a wetlands area meant to enhance student learning, and a campus-wide greenhouse, although neither is apparently located close enough to serve as a resource for the high school art classes (Interview Data, 2016). The outdoor space provided to the high school art wing consists of a gated patio area (partially concrete slab, partially grass) with two metal picnic tables and a small garden located off to the left; the garden has been planted and cared for by

an alternative education class and is not used as subject matter for the art classes who share the fenced-in area (Figure 4.9.8). The concrete slab patio space is accessible directly from the ceramics/sculpture studio and not the general 2D studio classroom that is a part of this study. The 2D teacher does occasionally send students out to this space, mostly for ventilation purposes when students use spray paint or fixatives—and in the process, relies on a kind of team-teaching approach to student supervision. The teacher in her 2D classroom does not have a direct line of sight to students she sends out there and either has to trust the students themselves to self-manage or the 3D teacher to keep an eye out on any students in the patio area. Additionally, the 3D studio is located at the far end of the art wing and, as such, is the fourth in a row of studio art classrooms. None of the other art classrooms run adjacent to the patio area. Instead, their outdoor access, if it were made available, is located outside of the fenced-in patio area. Students exiting through other art studio doorways in an attempt to use the described patio would find themselves locked out of that particular gated area. The 3D teacher told me that the small grassy area in the "outdoor patio space" is difficult to access and rarely mowed, likely due to its location. He also wonders,

> You know it's just odd, it's like they put this green space in but then they had no idea what to do with it, they're like … well [let] nature take its course. Well nature is gonna give you some pretty crappy stuff in this [gesturing toward Figure 4.9.8] you know, (Interview Data, 2016).

Figure 4.9.6. Site 12 large pane windows

and access door to outside patio.

Figure 4.9.7. Site 12 adjacent outdoor

patio.

Figure 4.9.8. Site 6 outdoor patio.

Site 18 is the most recently built and occupied of the 18 sites participating in this study. As noted in other sections, this site has many of the "bells and whistles" one would hope to find in modernized studio art classrooms. High ceilings and a large window area that brings in generous natural lighting and allows for an airy, open atmosphere were designed for this space (Figure 4.9.9). The architects and district facilities planners also included a large outdoor studio classroom, located on an adjacent roof area just off of the art wing. There are seven inside classrooms in the art wing, all having access from the door at the front of the art wing. This space is given a classroom number and is labeled as an "Outdoor Art Classroom" (Figure 4.9.10). On observation, it

does not seem that individual students or classes will be able to move in and out of this space fluidly from their classrooms. Teachers will more likely hold whole class sessions here, because no classroom exits directly onto this space, and all but one lack direct visual access to the space. According to the department head, the original blueprints included some aesthetic furnishings and large potted plants. However, at the time of the observation for this study, a month after the occupation of the new school, no provision for these items had been made and the space remained clear of any tables, art-related equipment, or plant life (Figure 4.9.11).

The flooring of this outdoor studio space is comprised of approximately 2'x2' concrete tiles with some significant grooving in between each one (Figure 4.9.12). This grooving might lend itself to catching art materials (bits of paper, pencils, pastels, crayons, small paint brushes, etc.) over time, to the possible extent that teachers or administrators might begin to limit the use of this outdoor space in order to curtail those problems. Because this space has no specific landscaping or aesthetic as an outdoor space, it may also prove to be a limited resource for the teachers and students in the art program, but its everyday use potential remained uncertain at the time of my site visit. The teacher I observed for the day mentioned that she used the space for an observational painting lesson in which her students painted a study of the sky with one of her classes.

Figure 4.9.9. Site 18 natural light access.

Figure 4.9.10. Site 18 outdoor art

classroom signage.

Figure 4.9.11. Site 18 outdoor art
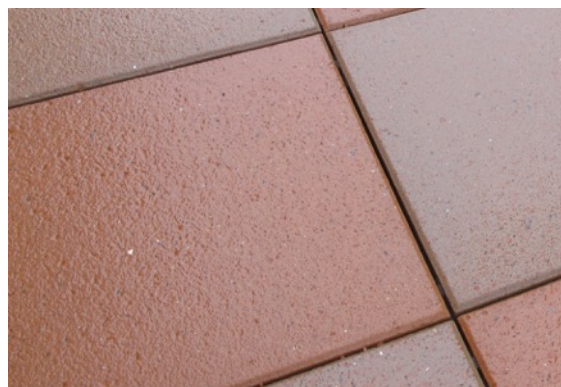
classroom.

Figure 4.9.12. Site 18 outdoor art

classroom concrete tile (detail).

For those sites without direct access to an outdoor art space, this study found a

few ways in which teachers or school designers have intentionally engaged with the idea

of outdoor spaces or natural elements more often found outside the walls of a school

building. Site 8's teacher, in particular, uses plant life with the intention of bringing

nature, foliage, and plant life into the classroom. She cares for at least 20 potted plants,

which are not only placed high and low in the classroom, but, according to the teacher,

were chosen specifically because each one is somewhat easy to keep alive and

flourishing while she is busy with the many other responsibilities of maintaining her

classroom (Figure 4.9.13). She told me she uses the plants for observational drawing

exercises. Her classroom also has large windows that face out over a local college, allowing for generous natural light to enter the studio space. Like Site 8, Sites 1, 15, and 16 are also located in larger urban settings and do not have direct access to an outdoor art patio. Each of these spaces has large pane glass windows that allow for natural light to enter the classroom, as well as aesthetic landscapes or cityscapes on view. Site 3, located on the fourth floor of a building in a sprawling urban/suburban area, has a large pane glass window with a sprawling suburban landscape visible from the classroom as well (Figure 4.9.14).

Three of the schools out of 18 include sculptural works in and around the landscaped outdoor areas of the school. Site 15 is known as a strong arts-based school and displays sculptural pieces that have been built by art classes over the years (Figure 4.9.15). Site 12 has a stone or concrete sculpture of a Chinese warrior (Figure 4.9.16) that is included in the outdoor patio landscape and is visible only to the art classroom and its inhabitants. Site 11 has several landscaped areas outside dedicated to the display of sculptures created by faculty members and alumni (Figure 4.9.17).

Figure 4.9.13. Site 8 visual outdoor access and plant life.

Figure 4.9.14. Site 3 large windows providing outdoor visual access.

Figure 4.9.15. Site 15 outdoor sculpture.

Figure 4.9.16. Site 12 outdoor sculpture.

Figure 4.9.17. Site 11 outdoor sculptural

pieces and work spaces.

Four art classrooms in this study, Sites 2, 5, 9 (Figure 4.9.18), and 17 (Figure

4.9.19), do not have windows or access to natural light at all.

Figure 4.9.18. Site 9 classroom with no   Figure 4.9.19. Site 17 classroom without

windows.   natural light.

Unintended Consequences/Design Gone Wrong

Often, when a new product is introduced, the previously undetected and often

unintended design shortcomings become apparent rather quickly after consumers begin

using it. Design Thinking, as a way of operating, attempts to prevent extreme design

flaws. Questions are raised in the beginning of the process that ask what problems need

to be addressed, ideas are generated, prototypes are created and tested, feedback is

received, designers reevaluate, and then more prototypes are created and tested … this

process is repeated until the product is the best that it can be, and then it is off to the

market (Simon, 1996). Even after such a thorough process, design oversights regularly

occur, and these shortcomings affect the ways in which consumers are able to enjoy the

end product. In a commercial environment, when products thrive or fail because of

design flaws, designers, manufacturers, and others involved in having put the product

out into the marketplace go to great lengths to resolve any weakness in the design that

consumers find annoying or problematic—including investing more time and money—so

that in the long run the consumer may enjoy the product, have confidence in the brand, and, ideally, become a repeat customer. The bottom line is that when a commercial product has bothersome features and needs a tweak or even a major overhaul, there are incentives and motivators that compel designers and decision makers to revisit and repair.

This is not always the case when new buildings are the product, especially new school buildings. Post-occupancy studies allow for architects and designers to learn about what is and what is not working in a new building and offer both the teachers and school facilities personnel an opportunity to work out any problems.

That said, no teachers involved in this study, particularly those teaching in recently constructed buildings, mentioned participating in a post-occupancy study. I learned from a District Art Supervisor, however, during an interview during the summer of 2014, that she and her staff personally conducted a post-occupancy study on her district's newly constructed school building, which is Site 6 in this study. They conducted this project so that she could use the knowledge gained to preemptively correct design flaws that might reoccur in the design of the next new school building the district was working on at the time. That newest school in the district is not a part of this study, and I have not been able to visit it, to date, so that I might see how any design concerns from Site 6 were addressed, changed, or reimagined.

Site 3 meets or exceeds nearly all of the NAEA's design recommendations, with the exception of an adjacent outdoor learning environment. It is spacious, has provisions for Wi-Fi on school-issued student devices, and is equipped with electrical outlets, sinks, spray booths, and two large storage rooms, just to name a few. One design challenge is visible in Figure 4.10.1, where a strip of track lighting is installed just outside of or adjacent to the pull-down screen for the LCD projector, both of which are mounted on the ceiling just above the whiteboard. Track lighting is typically used in an art room for one of two jobs: (1) to light up artwork on display, or (2) to cast light onto objects for still

life or value-study exercises. It is possible that the person or persons who decided to add the lighting unit here thought the large science lab workstation nearby would be used for a still-life setup, although that design decision would also have its complications. That scenario, however, does not seem to be at play in this situation, as the workstation is now used permanently as a desk for one of the teachers, so the track lighting seems to have no observable function where it hangs. There is an exhibit wall in the class entryway that does not have track lighting but might benefit from this fixture if the facilities department were to move it there (Figure 4.10.2).

Figure 4.10.1. Site 3 track lighting installed over screen—or vice-versa.

Figure 4.10.2. Site 3 exhibition hallway without track lighting.

Site 5 is not suffering from an original design flaw that was built into a dedicated art room—because the room was originally designed as a science classroom. The space, as an art classroom, however, is functionally constrained by two built-in science classroom furnishings that do not translate well for use in the studio art classroom. When the district decided to hire an art teacher for students at this nearly 60-year-old school building, one of the two science labs was reassigned to serve as a dedicated art

classroom. Renovations were not made to the classroom itself, but the two storage rooms in the hallway were retrofitted with a kiln, ventilation hood, shelving, flame resistant chemical storage cabinet, and flat files (Figure 4.10.3). In the classroom, the flow of traffic and flexible arrangement of furniture are interrupted by the two permanent science furnishings. Water and electricity flow to both units were disconnected for safety and function reasons, rendering four of the five sinks in the classroom unusable. One of the stations, a tall lab table with sink, currently serves as the teacher's desk and is described in the Educator Offices section of this chapter (Figure 4.10.4). The other large built-in, a "trifacial" pedestal sink with three faucets facing a center basin (Figure 4.10.5), sits immovable in the center of the room and is only used in the art classroom as an occasional distribution point for materials during some classes.

Figure 4.10.4. Site 5 science workstation as

teacher desk.

Figure 4.10.3. Site 5 storage room

equipped for kiln uses.

Figure 4.10.5. Site 5 science tri-face

pedestal sink that serves as distribution

point in the middle of the classroom.

Site 6's high school art room is only six years old and is part of an award-winning

school "village," housing elementary, middle, and high school buildings on the same

campus. One short-side wall of the classroom houses a large built-in furniture piece with

three columns of flat files that sit underneath a countertop equipped with two desktop

computer stations (Figure 4.10.6). Built-in flat files are traditionally a characteristic

aspect of art room design and are present in 13 of the classrooms in this study.

Computer stations are not standard, as this study has found, and therefore provisions for

housing them are not normalized to the studio art classroom built-in furnishings options.

What makes this particular combination flat file/computer station problematic is that

somewhere along the way, the contractors apparently ran out of room and simply cut off

what would have been a desk area to house the computer stations. One can surmise

this based on photographs of the area and on the limited knowledge the teacher had of

the circumstances that might have led to this outcome. Regardless, this rather abrupt

end to the desk area leaves a very small space underneath, just wide enough for one

chair to fit, and offers little to no operational room for the two desktop computers in use in this studio (Figure 4.10.7). The adjoining wall to the right also butts out a bit and infringes on this area, creating even less space for students to move and work.

Figure 4.10.6. Site 6 flat files/computer desk.

Figure 4.10.7. Site 6 flat files/computer desk construction and placement.

Site 8 was constructed within the last 10 years and is a modern space that appears, at first glance, to have much of what is hoped for in an art room. It has two large storage rooms, a kiln, large windows, two sinks, and walls lined with built-in cabinets of various styles and sizes. However, after a brief time in the space, it becomes obvious that there are a few design problems that affect the feel and functionality of the space. First, and most notable, is the narrowness of the room (Figure 4.10.8). As I observed during my site visit, the narrowness of the space inhibits teacher and student movement and their ability to connect with each other from one end of the room to the other. Additionally, when the teacher presents a lesson using the smartboard at the back of the room, she gathers students at the back two tables in order for all of them to have clear visibility of the presentation. Conversely, if she needs to use the chalkboard at the

front of the room, she gathers students at the other end of the space at the two closest tables there. The pre- and post-lesson seating adjustments diminish the total amount of time students have to work on their studio projects. According to the teacher, the narrowness of the room also contributes to a bottleneck at the two sinks during clean-up (Figure 4.10.9), so she limits the sink to her own use or to that of student helpers before or after school. Another design issue in this space is a section of the built-in cabinets that are also uncommonly narrow and, according to the art teacher, unsuitable for storing most art materials. The teacher refers to the approximately 15 feet of wall space on which these cabinets are based as "a wasted wall" (Figures 4.10.10, 4.10.11, 4.10.12) (Interview Data, 2016). Finally, there are several half or partial columns built into corners or in other places around the room (Figure 4.10.13). The teacher believes they are merely aesthetic, although I was not able to confirm that they are not load-bearing columns. Either way, the teacher states that their presence, as designed and constructed, makes it difficult to position most furnishings flush to the wall. The teacher specifically expressed frustration at losing the corners in the back of the room near her desk (Figure 4.10.14).

Figure 4.10.8. Site 8 narrow room design.

Figure 4.10.9. Site 8 narrow room design.
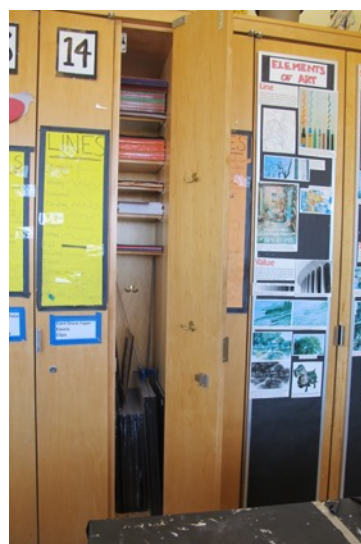
Figures 4.10.10, 11, 12. Site 8 narrow cabinets.

Figure 4.10.14. Site 8 pillar

placement 2.

Figure 4.10.13. Site 8 pillar placement.

Site 13 is another studio art classroom that has an unintended design flaw—one that, in truth, did not exist when this section of the building was designed and constructed 20 years ago when technology was not present in the classroom as it is today. To the contrary, this unique corner niche space was designed as a critique nook and is equipped with a penetrable surface for hanging works in progress, offering recessed lighting for effect. The department head mentioned during out conversation that this classroom was not designed with a specific wall clearly defined as "the front of the room," as most classrooms in schools have. Therefore, when the district decided to invest in smartboard technology within the past decade, the critique nook was the only flat wall surface available in this art room, so those who came to install the new smartboard did so on one of the two diagonally positioned walls of this corner space (Figure 4.10.15). The teacher expressed that she was not given a choice of where to put the smartboard or whether or not she even wanted it. The Technology section of this chapter addresses the findings related to how studio art classrooms are experiencing, struggling with, and engaging in the use of digital technologies in studio art classrooms. But this problem is highlighted in the Unintended Consequences section because of its unique placement issue. As can be seen in Figure 4.10.15, placing the smartboard on

this wall means it is located at a relatively severe angle from some students' vantage points. Furthermore, it inhabits one of the walls that was originally designed for critique sessions, a tradition long respected among art educators, and restricts access to the other critique wall, thereby inadvertently putting the notion and valuation of thoughtful critique at a risk in the minds of those who occupy this space and pursue creative endeavors here.

One design issue frequently seen in studio art classrooms of all levels, but, based on the findings of this study, not often addressed well in the planning stages of a classroom's development is the storage of students' personal items while they work. Site 15 is an example of what happens when students need to bring their bookbags to class but have no place to store them while they are working (Figure 4.10.16). The piles of bookbags in the back of the room are as much a safety hazard as they are unsightly, and an inconvenience, or even a creative flow issue. Having no dedicated place for their personal belongings may also inadvertently communicate to students that their belongings have no inherent or acknowledged value, and thus, students may feel less valued as a byproduct of this often unintentionally omitted design feature.

Figure 4.10.15. Site 13 angled smartboard

placement.

Figure 4.10.16. Site 15 bookbag

storage.

Finally, Site 18 is a brand-new school and, as such, seems nearly flawless at first glance. When I conducted my site visit there, the teachers and students were just shy of two months in and seemed to be enjoying many of the new features of their shiny new space. It is important to note that the space has not yet been filled up with the *stuff* of art-making for which studio art classrooms are often known. Given both of the caveats related to the newness of the space, the teachers were still able to specifically delineate for me the problems in design strategies that were already beginning to surface. One problem that nearly immediately stood out for all the art teachers, described to me during informal conversations with each as I toured their classrooms, is the apparent strategy to "enhance" the art wing's aesthetics by exposing the internal "ductwork" in the ceiling (see Figure 4.10.17). The art teachers expressed that they believe this might be the result of an architect trying to creatively mimic the design of the Georges Pompidou Center in Paris, France (Figure 4.10.18). The participant art teacher for the study told me that she finds the aesthetics of her classroom's ceiling apparatus to be not nearly as interesting as that of the Pompidou Center, adding that she avoids looking at it because

she finds it so unappealing (Interview Data, 2017). But the problem is larger than the immediate psychological "feel" induced by the exposed ceilings here. The more impactful issue felt by the teachers is the effect of not having sound-reducing ceiling tiles installed in their art rooms. This situation creates a dynamic in which nearly every sound bounces around the space, off the hard surfaces of the flooring, the butcher block tables, and the built-in wood furnishings, and causes a classroom noise level that all of the art teachers mentioned finding difficult and unpleasant. And while the remedy to this design drawback seems easy enough—asking the facilities department to install standard ceiling tiles in the already existing grid made for them, another functional problem needs to be addressed before that can occur: the ceiling-mounted fire sprinkler system is installed at a height above where the ceiling tiles' metal frames are located, and thus would need to be lowered before the noise level problem can be resolved.

Given what I have discovered thus far about the complexities of post facto design decisions, I am not sure what expense lowering the sprinklers and installing sound-absorbent tiles would entail or what it would take for the district to decide that the sound problem is a dire need that requires quick resolution, but my experience tells me the situation will likely be considered by administrative leadership as more of an inconvenience for which the teachers and students are simply going to have to make do for the time being—that is, if the teachers communicate the issue to anyone besides me, as they did when I directly asked for information about design problems for this study.

Figure 4.10.17. Site 18 exposed ceiling aesthetic.

Figure 4.10.18. Georges Pompidou Center, Paris.

Material Limitations Brought on by Space Limitations

Another emergent set of findings from this study concerns the limitations in use of materials or equipment brought about design, arrangement, and management decisions. It may be difficult to parcel out from whence the original problem arises— either the design of the space somehow seems to inhibit use, or the arrangement of the space becomes problematic or obstructive, or the teacher's management of the space or systems within the space causes disruptions to fluid access to materials and equipment, or even the procurement of some commonly used materials because they are deemed by the teacher to be too difficult to deal with. Again, at times the lines between any of these three contributing factors are not always clear, but the following scenarios discussed with participant teachers serve as examples of the range of possibilities of how and why certain materials and equipment become limited in studio art classrooms.

Site 1's two teachers reflected on decisions that were discussed at the design stage and how they impact their materials choices. First, they mentioned that since they both teach one-half of each of the elementary classes that come to art each week, the idea of constructing one-half of their space for three-dimensional art learning had been weighed against having both classrooms built in the same style. They decided against

this option but did request that their storage rooms be specifically built for long-term grade-level papier-mâché projects for fifth grade students. Given both of these decisions, the teachers now tell me they would enjoy doing woodworking or other three-dimensional projects if the space were more hospitable to those processes.

Site 2's teacher mentions that there are materials she would like to use more, but without a working sink in her room, with carpeted floors, and with a small-sized classroom and storage space, "You just kind of limit it to whatever you can tolerate pretty much" (Interview Data, 2016). She expressed interest in doing printmaking and clay projects with her students, but she has decided not to, given the limitations of her space. She said she would also like to paint more with her students but limits that as well, although not entirely, due to the sink issue. In addition, she limits paper sizes to 8.5x11 or 9x12 for most of her projects to be able to manage their storage in the small space.

The kiln at Site 8 was "busted" at the time of my site visit, so their use of kiln-fired clay projects is on indefinite hold. The teacher blamed her own lack of interest in clay for the current state of the kiln: "I mean, I wasn't doing maintenance because I'm just not a clay person, so there's some things you don't know about what you have to maintain, and I'm not saying that I didn't know, but I just didn't look into it with everything else [going on]" (Interview Data, 2016).

In art rooms such as those at Site 14 and Site 11, the use of equipment or materials seemed limited because of an overcrowding of the space or the storage units. This is not the same type of limitation as that found in a lack of availability, but its impact is not dissimilar. At Site 14, the cabinets, countertops, drawers, and storage rooms are packed full of a variety of materials and equipment. Given this, access to these items is cumbersome and unwieldy and appeared to hinder their use (Figure 4.12.1). Site 11 has a number of pieces of equipment that were blocked from use, such as the ventilation hood in Figure 4.12.2.

Figure 4.11.1. Site 14 blocked access to
materials.

Figure 4.11.2. Site 11 blocked ventilation
hood.

Finally, one limitation that runs across all participant sites except for Site 11 is the limitation to outdoor space—either by a site having no accessible outdoor learning spaces, or by the designed outdoor space being limited in its scope or range. These spaces were described in detail in an earlier section of this chapter, but are mentioned here because their design and arrangement, along with the state of access to them as found during my site visit, or a lack of access to them produces limitations of their use as pedagogical or curricular learning enhancements as they currently exist. Site 6's teacher stated that, given her location in relationship to the outdoor patio attached to the other art classroom, she can only send her students out to the patio for spray painting or for spraying adhesive to work, and only if the other teacher is present. At Site 18, the outdoor space is named an "outdoor art classroom," but the landscaped area that had been part of the original design had not yet been implemented, so there are limited options for hosting a class in this space for creative work.

Management of the Studio Art Classroom

A number of management-related issues were discovered during the course of this study. These findings were significant enough to warrant further research and to be mentioned here, but the data, as it is currently situated, is not sufficient enough to report. The issues that became apparent are related to questions of, (1) who exactly is counted as responsible and accountable for certain classroom cleaning and maintenance needs, (2) what understanding exists between art teachers and school administrators regarding the scheduling of classroom management activities into the art teacher's day or week, and (3) what type of daily schedule is needed that might allow art teachers dedicated time with which to organize and maintain materials access, rotation of supplies, deeper cleaning of tools and equipment, and preparation of recyclable materials such as clay and paper. Further research on topics such as these would be of great use to creating an overall understanding of that aspect of the use of the art classroom and any impact design and arrangement issues have on the management of the space. It is important to note that the data suggest that each participant site contained major design and arrangement issues or organizational struggles, whether it was the oldest classroom (Site 10) or the most recently built and occupied (Site 18), and each classroom was also found to be impacted by administrative, management, or design decisions that have produced problematic 'learning and making' environments for the site's art teachers and their students.

Based on my experience of 28 years in education, each of the participating art teachers appears to be a strong, enthusiastic, caring, and committed educator. While varying degrees of interest emerged among the group on the topic of managing their classrooms, during the interviews and informal conversations that we undertook on the day of my visit to their schools, each one appeared to care about their space, even if they expressed that they did not feel equipped with the time, organizational strategies, or

appropriate classroom provisions that would make it easier for them to do so more successfully.

Conclusion

Even when an art room is as closely fitted to the NAEA's *Design Standards* as Site 3 in this study, questions emerge as to why problems exist in almost equal measure in such an "ideal" space as those found in Site 2, a space that was never designed to be an art classroom. What is missing in our understanding, in school culture, in the design strategies used, in the NAEA's recommendations, or in the teacher's practice that makes it difficult to end up with a space that works intuitively for students and teachers? Does it matter that the art classrooms from this study were often found to be messy and disorderly? Do students and teachers flourish in such spaces, regardless of whether or not they are designed well or function as intuitively as one would hope? Do the NAEA's *Design Standards* create a vision for "a place where good things happen," as my friend Dr. Sean Justice and I discussed one day (personal communication, 2015)? Finally, how do the studio art classrooms included in this study, in the conditions in which they were found on the day of my site visits, influence a sense of well-being and human flourishing for students and teachers? This question and some of the others listed above will be discussed in Chapter V.

Chapter Summary

This chapter names 17 separate categories addressed in the NAEA *Design Standards*, and at least 117 specific features recommended for a well-designed studio (see Appendices A & D). From the descriptions, it is easy to see how complex a studio art classroom is in terms of physical space needs and essential equipment provisions

alone. Nine of the NAEA's categories were addressed in depth in this chapter, along with the three that emerged during data analysis. As a result, over 200 unique problems that were found within the 18 studio art classrooms included in this study have been described here in text and were substantiated through color photographs.

Chapter V

DISCUSSION

Imagining Things as if They Could be Otherwise

Overview of the Discussion

This chapter will build on the data presented in Chapter IV by first seeking to understand the misperceptions that endure among art educators and other professionals regarding the "essence" of the art classroom. When misperceptions flourish, students and teachers in art classrooms tend not to. Examples from a number of NAEA *Design Standards* recommendations will be discussed as situations in which teachers are found to be "making do" in their classrooms, more often than not, and where compromises to human flourishing are often unintentionally cultivated in the studio art classrooms included in this study.

The primary argument of this chapter is that, while art classrooms appear to be weighed down by problems that cross in similar fashion from school to school, if art teachers, architects, school administrators, and other influential professionals will take on an "imagine things as if they could be otherwise" (Greene, 1995, p. 16) perspective and aim at raising the bar from "making do" toward an objective that will encourage human flourishing for art students and teachers, they will be more inclined to design studio art classrooms that intuitively suit the creative activity that takes place there.

Research Questions Reconsidered

In the early stages of this study, the following questions were pursued as the impetus for inquiry:

- Given the existence of the National Art Education Association's professional recommendations for the design of art studios in schools, and Parker Palmer's six paradoxical tensions that he suggests be built into learning environments, how are both interpreted in selected public and private schools in three different geographic areas of the United States of America, and to what extent do they facilitate the well-being and flourishing of individual art teachers and their students?

  1. How do dedicated studio art spaces of individual schools reflect professional guidelines in their design and arrangement?

  2. How and why were the individual studio spaces designed and built, and under what guidelines and practices are they maintained?

  3. Where do disjunctions occur, if they do, between what is recommended and what is otherwise needed, in classroom studio art design?

  4. How do individual studio settings, with their distinct design and layout issues, influence senses of well-being and human flourishing?

  5. How are Parker Palmer's Six Paradoxical Tensions for designing a classroom session identified in the physical elements of K-12 studio art classrooms?

During the data collection and early analysis stages of this study, like the twigs, stones, and leaves that Andy Goldsworthy carefully arranges in his nature-based sculptures, the bits and pieces of data related to sinks, tables, LCD projectors, and every other physical element represented in the National Art Education Association's *Design Standards for School Art Facilities* (2015) were meticulously analyzed piece by piece

and eventually fashioned into a metaphorical sculptural shape, structurally representing what we currently know about the state of studio art classrooms in the United States of America today as a result of this study.

Not surprisingly, the difficult part of data collection and analysis came when I began to try to connect the very tangible and practical features of the physical spaces with the intangible, ethereal notions of what it means to flourish within the actual physical spaces of the studio art classroom. The challenge brought me to ask, "How do I go about collecting data on senses of joy, delight, and freedom, in addition to the other indicators of human flourishing that are presented in Chapter II's literature review?" And, in follow-up, I also asked myself, "How will I use Palmer's six tensions (2007, p. 76) to analyze data that has been difficult to collect in the delineated boxes of the checklists that I had created?" During both data collection and analysis, I was tempted more than once to abandon or curtail the lines of inquiry that were attached to the indicators of human flourishing. I realized at least midway through the data collection phase that the amount of data coming from the 18 participant sites was already generating more information than I could report on thoroughly, even if only through cross-case analysis methods. But because she knows that I am ultimately most interested in the interconnectedness of the physical elements of studio art classrooms with student and teacher experiences of human flourishing within art classrooms, Dr. Burton encouraged me to find a way to represent what the data were already suggesting at that time.

As I continued to struggle with how to accomplish this, it became apparent that I needed to reevaluate the research questions originally born of my interest in human flourishing. One short paragraph here cannot capture the iterative process of evaluating, reevaluating, and eventually restating the research questions that I originally pursued, along with my ongoing attempts to understand what I thought I wanted to know and what was manageable to know as a result of this study. Going through that process, I was reminded again of Goldsworthy's attempts at building cairns as he dealt with four

collapses in one day (Riedelsheimer, 2004). As each round of grappling with the research questions led to a recognition that I was not quite there yet, the image of Goldsworthy scratching his head and looking at the pile of stones recently collapsed came to mind. And, after "getting to know the [data] a little more each time," (Riedelsheimer, 2004, *Goldsworthy's word "stone" is replaced by me with the word "data"*), I eventually I determined that the original principal research question and Subquestion 5 were both too narrowly focused on Parker Palmer's six paradoxical tensions (2007, p. 76) to be of benefit to this study. In addition, I have ultimately come to understand that, while I am very interested in Palmer's educational theories on a number of levels, and particularly with how studio art classroom experiences might be enriched through consideration of his insightful perspective, this study does not have the capacity to cover that discussion as thoughtfully as I would prefer.

In addition, the original sub-question 2 was subsequently found to be irrelevant to the aims of this study, although some relevant and useful data were collected during the teacher interviews and informal dialog with a few school administrators. Ultimately, some of the data could not be fully vetted during my site visits, and overall the information was not found to be significant enough to the purposes of this study to warrant further emphasis as a part of this study.

Adaptations of the original research question and sub-questions, which are named in Chapter I and are used to craft the research, are the following:

- Given the existence of the National Art Education Association's professional recommendations for the design of studio art classrooms in schools, along with scholarly and practice-based notions of human flourishing for children, how are both interpreted in selected public and private schools in three different geographic areas of the United States of America, and to what extent do they make the well-being and flourishing of individual art teachers and their students possible?

1. How do dedicated studio art spaces in individual schools reflect the NAEA's professional recommendations for design and arrangement?

2. Where do disjunctions occur, if they do, between what is recommended, what is, and what is otherwise needed, in studio art classroom design?

3. In what ways do design and arrangement issues require teachers to "make do" with what they have or create alternate uses of a variety of items in order to meet their own apparent or perceived needs?

4. How do these individual studio settings, with their distinct design and arrangement issues, influence senses of well-being and human flourishing?

These newer questions have come to better reflect the data collection and analysis stages as they were experienced, and more straightforwardly follow the initial intent and purpose of this research project.

Misperceptions and Misunderstandings

In his *Rivers and Tides* documentary, Andy Goldsworthy reflects on a misperception about sheep that he says makes getting to the root of their "essence" very difficult—that sheep are often perceived to be wooly animals (thus soft and somewhat powerless) —but he argues that sheep are "incredibly powerful" in their own way and have had significant impact on both human history (particularly in his homeland of Scotland) and the physical landscape in which they reside as well (Riedelsheimer, 2004). I find his thoughtfulness on something as ostensibly simple as the essence of sheep refreshing and genuinely discerning. His life is spent imbedded in the natural environment in which sheep reside as he researches the land and its "inhabitants." He seeks to "know a little more with each collapse" of the environmentally based sculptures he works to build, recognizing that the structures "grow in proportion to his

understanding." Few have come to know the history and essence of sheep as intimately as he has.

I feel a kindred connection to his imbedded experience as an artist working within a natural environment throughout his career. My own imbedded experience, in this case, is more deeply rooted in spaces dedicated to visual art learning activities. The spaces in which I have spent my career are very different from those that Andy Goldsworthy roams, although I sometimes wish that were not the case. At the same time, I am quite certain that I am as passionate about the art classroom environment as he is about the environments in which he lives, loves, and works. And although I am introducing a bit of a mixed metaphor, I find that, like Goldsworthy's reflections about sheep, studio art classrooms suffer a comparable misunderstanding. I see this when I am discussing the physical state of art classrooms with a broad spectrum of individuals, whether they be professionals in related fields, friends, acquaintances, strangers, or even fellow art educators. "It's an art room! It's *meant* to be messy!" is a common response to at least the *notion* of what a studio art classroom is. Most of the time when someone says this to me, they smile excitedly and tend to demonstrate through a shoulder shrug or the wave of a hand that this is just how things are and no further discussion will change the known facts about children's art classrooms.

Yet, when I have encountered administrators or other school faculty and staff who are dealing with the reality of the cluttered shelves, stuffed corners, and crowded storerooms found in the art room at their particular school, when I show images of some of the nooks and corners and cabinets found in the classrooms in this study or in other classrooms I have visited throughout the course of my career, or even when I am in the classroom taking photographs of an art teacher's storage closets, cabinets, and bins, all of the above-mentioned parties indicate through verbal and non-verbal signals that they are uncomfortable with the situation, often exhibiting an added level of frustration with not knowing how to *solve the problem of the art room*. In one sense, they know that the

art classroom is supposed to be "a place where good things happen," as my friend and colleague Dr. Sean Justice (personal communication, 2015) describes it, where art materials are explored and the creative energy of childhood is given a space in which to flourish; on the other hand, as discovered through this study, the space is frequently found to be overwhelmed with disorganization, housing a variety of "make do" storage options, and is often filled with an abundance of mixed materials that inundates the senses and creates a cacophony of visual-noise and sensory dissonance. Thus, there is a disconnect between the onlooker's perception and what the actual situation is. Like Goldsworthy suggests about sheep, the very "essence" of the art room has become eclipsed by the things we perceive it to be, rather than trying to get to the root of what it really is. The result is that we lose sight of what it has the potential to become if we give it and those who work and play in it the chance to flourish.

So, what *is* the essence of a studio art classroom? What is at the heart of what we do in these spaces that are dedicated to the teaching and learning of art? If sheep have, over the course of centuries, had the power to shape human history, what, if anything, does the art classroom have the power to shape? Where do the NAEA *Design Standards* and notions of human flourishing connect to philosophical questions about the essence of the K-12 studio classroom? This dissertation research project cannot answer the above questions comprehensively, of course. It can, however, shed some new light on what the questions seek to know, if merely because they are raised and pondered, even a little through this study.

Our work to know, better understand, and possibly re-imagine the built environment as we shape it for our students, will, like Goldsworthy discovered, grow in proportion to our understanding. My hope as an art educator and one interested in understanding the interplay of physical studio classroom spaces and their impact on human flourishing in the context of creative activity is to take what we learn from this study and, where germane, re-imagine the art room's physical design and arrangement

so that both the NAEA recommendations and notions of human flourishing are intentionally attended to during the design process. Ultimately, architects, school planners, administrators, teachers, and academics can and should act upon the new knowledge presented here as we attempt to build studio structures that grow in proportion to our understanding.

The Problem Restated

My thesis from the outset of this study has been that we have not yet learned how to design or build studio art classrooms that are intuitive to use for K-12 visual art learning and making, nor do we fully understand what adjustments need to be made to traditional design strategies so that the students and teachers embarking in creative activity there might flourish more fully. I have based my original suppositions on over 25 years of experiences in art classrooms—not only in my own classrooms, but also in the many I have had the opportunity to visit, observe in, and explore over the years. Conversations, mostly informal, ranging from brief, spontaneous ones, to those that are still ongoing, undertaken with administrators, art teachers, facilities personnel, architects, school planners, and other members of a variety of school cultures, have also inspired me to pursue the questions asked through this study.

My theory questions whether our studio spaces in schools innately suit the materials, activities, and persons navigating the space. The NAEA *Design Standards* are a point from which to launch an inquiry, not only into how art classrooms are equipped, but also to determine whether or not the *Design Standards*, if fully adopted, adequately address the needs of the classroom for optimal learning.

I also theorize that we have not strongly considered the design and arrangement of visual art classrooms as they pertain to providing art experiences for children in places that are intentionally primed for "good things" to happen—good things such as

inviting our students into spaces that are genuinely hospitable to them and their interests, that are arranged to delight and excite their creative senses, and that inspire them to learn and create with enthusiasm and a natural curiosity.

As I have studied the situational dynamics of each of the studio art classrooms included in this study, unfortunately none stands out as a model exemplar. On the contrary, each one has, for its own unique reasons, multiple conditions that create distinct long-term problems for the teacher and her students. Chapter IV has enumerated hundreds of specific problems found in the classrooms in this study and that were described by participating teachers or were observed and substantiated subsequently through photographic analysis. The intent of this study has never been to focus on adverse aspects of art classrooms for the sake of simply criticizing them. My intent, rather, has been to better understand the nuanced situational needs of art teachers and their students and to construct real-time knowledge of the hindrances that may counteract and potentially impede creative play, exploration, and the responsive interplay between materials and the actions of children in their role as makers of art. The data suggest that, at least in the cases represented here, the special provisions necessary for studio art classrooms to work in support of art learning and making while nurturing opportunities for students and teachers to flourish are often not what they need to be.

The following two sections highlight examples of (1) teachers "making do" in their art classrooms, old and new, and (2) ways in which the physical features of art rooms were found to create obstructions to the likelihood of human flourishing. The discussion may not always refer directly to specific NAEA recommendations but will rely heavily on the descriptions of these recommendations in Chapter IV to support the notions of "making do" and obstructions to human flourishing. It is important to note that for every example presented in the following two sections and observed or photographed at participating schools, there are at least two others that could appropriately take its place.

"Making Do" or Making Progress?

Even in the newest school buildings included in this study, the data demonstrate that, post-occupancy, art teachers are tweaking what they can about their studio art classrooms, "making do" with what they have found in their new classrooms and reconciling their hopes for the new space with the reality of its strengths, limitations, and design flaws.

For example, on the day of my visit, the visual art classrooms at Site 18 had only been occupied by teachers and students for a little over a month. Within that month, five major concerns began to surface and were raised by the teachers during both informal conversations and the on-site interview with the participating teacher. Each of the five teachers I spoke with stated that decisions had been made by architects, designers, district facilities personnel, or other school administrators that were either made on behalf of them or in contrast to what they had requested or expected through their participation in earlier stages of the planning and design process. The five areas of concern have been detailed in Chapter IV separately but, in summary, were described to me as: (1) the absence of sound-absorbing ceiling tiles; (2) an outdoor classroom with little visual stimulation or landscaping to enrich arts learning; (3) tables and stools too tall for younger students and tables too heavy to move even an inch without assistance; (4) for the middle school art teacher, a kiln room with direct access only through the adjacent classroom; and (5) narrow trough-style aluminum sinks that have no surrounding waterproof countertop space. The adjoining counter space is specifically recommended in the NAEA *Design Standards*.

This last problem of the five listed is the most noticeable one the teachers faced in terms of the immediate need to "make do." Even at only one month into occupancy, each teacher had already placed a large two-tiered rubber cart next to their sinks so that they could drain and store water bowls, paintbrushes, and other items (Figure 5.1). This

"make do" solution is not aesthetically or functionally ideal, but because there is little the teachers will be able to do to remedy the lack of countertop space any other way, my guess is that the carts will be in place next to the sinks for the foreseeable future—and may be for years to come. The other four problems teachers discovered upon taking occupancy of their classrooms cannot be resolved without school administrators and facilities managers agreeing to additional work projects and budget allotments. Until and unless school decision makers recognize and seek to resolve each problem, the teachers and their students will have to work around the impediments created as a direct result of the design decisions that created them.

Figure 5.1. Site 18 sink with makeshift counter.

Additionally, Sites 1, 3, 6, 8, and 17 were all built and occupied for the first time within the last decade, which means that they are considered newer buildings. I have found that, in general, the perception among educators and others is that, by the nature of their newness, modern design strategies in schools create better situations for teachers and their students. Each of the participating teachers at the six newest schools was given some input into the initial planning and design stages of their art classrooms. Site 1's elementary teachers even participated in an off-site visit to observe another local art classroom so that their ideas might be stimulated by seeing other spaces in use. And yet each of the new studio spaces, after final construction, was described to have more

than one original design feature that created obstructions to the daily operation of classes and the pedagogical aims of the teacher. Some of the problems were addressed within a few months of occupancy, such as the motion sensor sinks at Site 1 and the switching out of a sink at Site 17. Other problems are literally too large and cumbersome to resolve—like the large science station at Site 3 and the incongruously installed flat file and computer station at Site 6. As a result, both sites' teachers and their students will have to work around the issue for many years. Still other problems are small or out of the way enough to simply be ignored, like the demonstration mirror mounted on the ceiling of Site 3 or the set of track lights installed a couple of inches away from the pull-down media screen, also at Site 3.

Storage systems and furnishings are interesting challenges for teachers as well, as I found most teachers participating in this study seemed to be on a constant quest for solutions that would allow them to "make do" with what they have. The teachers at Sites 2 and 8 have recruited their husbands to come in and build shelves or make other adjustments and rearrangements to their storage closets and classroom furnishings. Similarly, Site 10's teacher has been working with a school custodian for the past two years to install and paint some additional rudimentary shelving in the back of her classroom. She, along with at least half of the teachers included in this study, has purchased additional shelving options for her classroom with her own funds. As she was preparing her classroom to welcome students for the first time, Site 17's teacher asked that the shelving originally installed in her small storage closet be moved into the classroom proper so that she could give her students immediate visual and physical access to materials for her Choice-Based curriculum. The school said they would move the shelving but also told her they could not purchase any additional shelving for her closet if she did so. She then had to make a choice between having storage shelves in the closet or in her classroom. She ultimately chose the classroom and makes do with a table and a metal cabinet in the closet.

An interesting phenomenon I discovered through my research is that when a school building is being planned, classrooms are not always dedicated to a specific role or content area in the earliest stages of planning and design. There is an element of choice on the part of the teacher that results, with potential for both positive and negative outcomes. The inference of choice is a positive and empowering experience for the teacher, which may inadvertently be misleading in some cases. The data from this study suggest that if the school architects, contractors, and school administration are only partially invested in a particular space becoming a dedicated studio art classroom at the beginning of the planning stages, then vital decisions that could ultimately affect form and function will not be able to be implemented in what inevitably becomes an already restricted blueprint. For example, after the school building had reached a final design and construction stage, the art teacher at Site 17 was given the choice of having a second-floor classroom with a skylight but not a sink, or a first-floor room with a sink and no natural light source. Thus, before she ever stepped into the space to arrange it for her students, she had already been asked to make a choice that would limit her pedagogical and curricular options going forward. She had to choose which was more important, a sink or natural light, and she was thus consigned to "make do" in a classroom not yet completed, but already restrictive in its capacity to serve both her and her students' eventual needs and creative capacities.

Similarly, but with its own unique set of problems, Site 5 is now dedicated as an art classroom but was originally designed to be a science lab. As described in Chapter IV, this reassignment happened with no changes to the design or layout of the space, and because of that, the teacher is called upon to "make do" with two large science lab workstations that are permanently fixed in place; as art classroom furnishings, these structures are minimally supportive of the art activity that takes place there. This is not a provisional or temporary problem, as these stations have been located in what was reassigned as a dedicated art room for at least a decade. The

presently inoperable tri-facial sink located in the center of the room requires that

everything else in the room be placed in relationship to its locked-in configuration. The

additional science workstation is located only a few feet away from the tri-facial sink and

secondarily dictates movement about the room. It serves as the teacher's desk area,

although its functionality as a desk is not ideal. From what I observed during my site

visit, informal conversations, and the on-site interview with the teacher, it is apparent that

daily creative activity in this particular classroom is in a constant state of "making do"

due to the incongruence of what it was built to be and what it is tasked to be now.

Similarly, a second art classroom at Site 15, not included in this study, was also formerly

a science lab. The teacher treated one whole wall as virtually unusable because of the

presence of old science lab furnishings that she felt were not adaptable to her or her

students' needs. The accompanying demonstration workstation was serving as a large

and cumbersome teacher's desk at the time of my visit as well. I am not sure what it

would take for facilities crews to remove these types of furnishings if a science room is

reassigned to become an art room, but the findings of this study suggest that science lab

furnishings are not as straightforwardly transferable to art learning as the untrained eye

might anticipate. Instead, as I observed during my site visits to these two schools, they

tend to be in the way more often than not.

Another strong indicator that art teachers in this study find themselves in a

constant state of "making do" became apparent when several participant teachers

revealed their annual practice of reevaluating their classrooms' arrangement and the

organizational strategies they have adopted to coincide with that arrangement. The

teacher at Site 5 stated that "every year I have to kind of like redo my room, rearrange …

I've tried different scenarios" (Interview Data, 2016). Site 12's teacher echoed her need

to rework the space when she said that, over the years, "we've tweaked it to make it

more accommodating" (Interview Data, 2017). And Site 8's teacher put words on the

thought process that many of these teachers face when she said, "Every year I try to

come up with a slightly better system…. I'm like, 'Okay … this is going to be better.' I'm starting to figure out how to use this space … I always have to rearrange" (Interview Data, 2016). The teachers from Sites 2, 4, 7, 10, 14, 16, and 17 also mentioned revising their classrooms through rearranging, reassigning the function of some equipment, reclaiming discarded furniture or storage bins from around the school, or purchasing additional equipment or furniture. Most communicated that they do not yet feel confident that their classrooms are situated well enough that they do not have to think about form and function as a daily aspect of their work as a teacher.

The alternative to the constant reworking of the space seems to be, as observed during this study, for the teacher to look past the organizational problems and concentrate on the art teaching, allowing the environment to be whatever it becomes from day to day. Site 3 seemed to me to be an example of teachers taking this approach. When asked, the two art teachers using the space admitted to spending an estimated 5% of their time working on managing the space and the materials stored there. The fact that Site 3's art classroom most closely meets many of the NAEA *Design Standards* of any included in this study, but is still observed to be organizationally challenged, raises the question most acutely about whether or not the *Design Standard*s alone offer enough guidance to create studio art classrooms that intuitively suit the materials and activities that take place inside them. Site 11, too, by the sheer volume of *stuff* crowded into the space, along with visual indicators of prior years of "making do" in room arrangement and added provisional furnishings, suggests that annual rearrangements and reevaluations of the space might have reached their limit after 20 years—thus, the teacher and her students appear to simply work around the "visual noise" and physical obstructions deeply rooted in the space.

Art teachers facilitate classes in some of the most dynamic spaces in the whole of a school building. They are tasked to teach historical and contemporary art practices, provide fun and challenging art-making experiences for their students, display student

art around the school, and support the arts on behalf of the school at various extracurricular events, among so many other responsibilities. Managing their studio art classrooms is a vital part of their work as well, but given what I have learned through this study, the participating teachers, like many others I have met over the course of my career, have become champions of "making do." My thesis appears to be confirmed, at least to some extent, by the number and variety of ways the teachers involved in this study were found to be "making do," under whatever circumstances they have been dealt, and whether they teach in the oldest classroom or one just inhabited for the first time. If the teachers included in this study are frequently reevaluating their classroom arrangement and attempting to find ways to make it work better, then it is reasonable to assume that the space is not designed or arranged in a way that supports the work that is undertaken there.

What Compromises Human Flourishing in Studio Art Classrooms?

As I mentioned earlier, this study is expressly interested in the interplay of the physical environment and its influence on human flourishing in the studio art classroom. In light of the lengthy list of problematic conditions raised in Chapter IV, this section will discuss how some of the problems observed at participating sites potentially hinder or compromise opportunities for art students and their teachers to flourish in the midst of creative activity. Of added significance is what I have learned from art teachers during this study, namely that their own actions and pedagogical decisions are at times the direct result of real or perceived limitations of the built environment as they experience it. Their decisions are in the interest of behavioral and situational management, which may also have an inadvertent negative impact on their students' abilities to flourish within the studio environment.

Following is a small selection of examples raised by participant art teachers of the frustrations with design or arrangement they struggle with on a daily basis in their classrooms. Each example offers insight into a larger framework of domains, delineated into groupings below, that produce what are likely unintended consequences and that have the potential, if not natural progression, to negatively influence the general well-being and flourishing of students and their teachers in the studio art classroom. They are emblematic of a range of situations that, as seen through this study, influence, interrupt, and at times even extinguish the vibrant possibilities of interplay between place and person, particularly the art room and its inhabitants. As in the previous section, the selection of examples provided here could easily be replaced by several others that were observed and photographed during the course of this research project. While participating teachers and their students have "made do" under these particular circumstances and the many others described in Chapter IV, my question continues to be, "Can we not do better?"

Design Decisions

Examples:

- Site 6 was designed with an outdoor patio adjacent to and accessible only via the 3D classroom at the end of a row of four classrooms along one hallway (Figure 5.2). This setup raises questions about the design process for this school and what assumptions, if any, may have guided the decisions that led to the 3D studio space becoming the chosen recipient of the only outdoor access point of the four art rooms. Further, was any consideration given at all to the other three art classrooms' needs or interests, curricular or otherwise, to have immediately adjacent outdoor access? The 3D art teacher, who took part in a portion of our interview time, offered this comment regarding the teachers' original contribution of ideas to the design stage of the building and his

confusion about the resulting design choice: "…we talked about getting kids outside all the time. So why not painting and drawing kids too?" (Interview Data, 2016).

Figure 5.2. Site 6 outdoor art patio.

- When asked about the color of the walls in the brand-new art wing, Site 18's teacher had this to say: "It's beige." She explained further, "The school has all these beautiful, brightly colored walls … and then you get to the art wing and it's beige…. My first art room had a lime green wall. It was fun! The kids were excited!" (Interview Data, 2017). I am not sure where it developed, but there seems to be a long-standing creed among some art educators and school designers that neutral colors on classroom walls are best, if not the only acceptable choice. I am not personally convinced of this point of view, and when I was touring the other areas of Site 18 at the beginning of my visit, I was excited to see the colorful walls in the main classroom areas as I walked through. But when I got to the art wing and saw the neutral aesthetic, like the participant art teacher, I wondered why the powers-that-be decided to use a neutral color palette here when the rest of the school was abounding in color. My questions are these: Why *not* use splashes of color around the studio art classroom? Have we considered the ways in which color might energize or

engage students' imaginations, evoke feelings of delight, and stimulate

creative inquiry, especially in a space in which color is one component of many

materials that we hope will accomplish this in their art-making experiences?

What other ways might we inspire and support our students through aesthetic

design and arrangement? Or do we really believe the aesthetic treatment of

the studio art classroom does not matter or impact our students' and their

teachers' senses of well-being? Kenn Fisher (2001), in his article "Building

Better Outcomes," states that color is "believed to influence student attitudes,

behaviours and learning," and that "it is also believed that carefully planned

colour schemes can influence absenteeism, promote positive feelings about

the school and, if students like the colours, can also influence muscular

tension and motor control." Interestingly, Fisher cites the work of two others—

color therapist Theo Gimbel (1997) and interior designer John Pile (1997)—

who collectively agree that white has a stark effect. As a result, Fisher (2001)

does not recommend that it be used in the classroom. Orange, he argues

conversely, is seen to coincide with feelings of "lightness and joy," while

turquoise evokes "cool, calming, and soothing" responses among students,

(1997).

Restrictive Spaces

Examples:

- During our interview, Site 8's teacher mentioned that she rarely allows

  students to use the two sinks in the classroom during class clean-up. Upon

  further discussion, she speculated that she might be compelled to rethink

  students' options to move about the space more freely if there were more

  physical space available, around the sinks specifically, and if there were more

  adequate and appropriate in-room storage. This classroom is less than half of

the recommended size for the number of students it serves, as well as being quite narrow, and the egress between the tables and sink wall is approximately two feet, so the fact that the teacher feels that the room is too crowded for students to "congregate" around the sinks waiting to clean up has some merit, based on what I observed.

- Site 13's classrooms, according to both teachers, also do not have enough physical space, particularly for their 25 or more students in each class, to spread out to work on projects within the two individual classrooms in the art wing. Students who wish to do so either move to the other classroom if it is vacant during a certain class session, or they move to the main corridor outside the art wing to sit on the floor to work (Figure 5.3).

Figure 5.3. Site 13 students working in hallway.

Distrust of Students' Presence in the Space

Examples:

- The same teacher at Site 8 who, in the previous bullet point, said during our interview that she would consider changing her mind about student use of the sinks if there were more space in her classroom immediately questioned herself on that thought by stating that she actually does not feel her students' spatial awareness is trustworthy; thus, she is not sure her students would be

able to exercise the control necessary to be allowed to move about the studio space without causing a certain amount of chaos and behavioral management issues (Interview Data, 2016).

- When asked about how she felt about the tall height of the shelves installed above her built-in cabinets, Site 18's teacher stated that she prefers that her elementary students not have reachable access to the small stackable bins filled with regularly used, easily distributable materials such as markers, pencils, and crayons. While I did not pursue this discussion point much further during my interview, it surprised me that she would want to limit her students' ability to access to such a well-organized system of commonly used art materials. This particular school serves gifted and talented students as well as those deemed to be artistically inclined, so it would seem appropriate to begin teaching them personal responsibility and care for the studio space by intentionally situating certain materials for fingertip accessibility, even if they are young.

- Of a similar mindset, one of Site 13's two teachers, when asked about student access to material choices in the art room, eventually responded, "We're also dealing with younger kids (she works with high school students), *who can't just be turned loose in a space like that to create art*" (Interview Data, 2017, emphasis mine). While many materials in the visual art space she co-manages appear to be situated so that they are accessible to her students during studio work times, the implications of her comment above highlight the heart of what many teachers fear—that if their students are "turned loose" in a space "like that" (she is referring to a space in which materials are arranged for "free and independent" student accessibility), the students would not be able to be trusted with the care and order of the space, along with their general presence in the space. Her use of the phrase "turned loose" implies that a teacher who

creates such a space will likely lose control over her classroom rather than see her students learn to act responsibly and flourish more fully as she models studio care standards for them and the students begin to invest themselves in artistic endeavors and collaborative care of the art room.

Crowded Spaces

Examples:

- Site 12's teacher is a self-proclaimed "packrat" (Interview Data, 2017). She is not dissimilar to a few of the other teachers participating in this study, but she is the first to admit that one reason her classroom is difficult to manage is because of the 20-year accumulation of *stuff* she or her students may or may not use over the course of each school year. She mentioned that she is not eager to work the extra hours it would take to edit items and to organize things more efficiently at this point.

- Site 11's teacher does not call herself a "packrat," but she does acknowledge that when she retires soon, the large variety of items currently housed in her classroom, also collected over 20 years, will likely be thrown out—because either her replacement teacher or other school staff will not value the items she has collected as much as she does. She also revealed that she has recently begun working on reducing the abundance of items stored in her classroom given her plans to retire soon, but as can be seen in Figures 5.4 and 5.5, there is still a large buildup of collectables and miscellaneous materials that reduce the amount of usable classroom space by nearly half, in my estimation.

Figure 5.4. Site 11 collection of materials.   Figure 5.5. Site 11 diminished classroom

space.

- Site 14's teacher collects a wide range of art materials, in addition to old,

  reclaimed library media carts and large group art projects such as papier-

  mâché animals. Her drawers, cabinets, and storeroom are filled to the brim

  with fun materials (Figures 5.6 and 5.7), but these materials are so packed in

  that it seems they are both inaccessible for imaginative exploration by her

  students and inconvenient to pull from in order to inspire the teacher herself in

  her lesson planning. The lessons on the day of my visit suggested that this

  might be true, demonstrating a limited, even meager use of materials in a

  room where an abundance of delightful materials fills the space. The teacher

  mentioned during informal conversation throughout the day of my visit that it

  takes a bit of an effort for her to access the child-sized cabinets and drawers,

  another indicator that the ample materials stored there are difficult to pull from.

  Of additional consideration is the fact that I conducted my site visit in the

  middle of the spring semester, so the abundance of materials found there

  would likely stay somewhat untouched during the remaining academic year in

  which I observed.

Figure 5.6. Site 14 materials in cabinet.   Figure 5.7. Site 14 materials in drawer.

- Site 15's materials do not appear to be particularly plentiful, but even what little

  materials they did have on hand were both physically and visually chaotic, and

  quite messy at the time of my visit (Figures 5.8 and 5.9). It is difficult to

  understand how the state of the materials as I observed them helps students

  or their teacher to be effective in their pursuit of creative art-making. Sherrie

  Bourg Carter, Psy. D. (2012) wrote in *Psychology Today* that clutter, among

  other things, "bombards our minds with excessive stimuli," "distracts us,"

  "makes us anxious," "frustrates us by preventing us from locating what we

  need," and "inhibits creativity and productivity by invading the open spaces

  that allow most people to think, brain storm, and problem solve." The artwork I

  saw displayed throughout the halls of Site 15 was, in my opinion, exemplary,

  but I still wonder how the students feel about working in a space that is in as

  much disarray as this one was on the day of my visit.

Figure 5.8. Site 15 drawer storage.   Figure 5.9. Site 15 countertop storage.

In general, having large, messy collections of miscellaneous materials, being described as a "packrat" or even as someone who hoards, are typically perceived societally to be problematic and potentially unhealthy to one's well-being; in extreme cases, this is treated as a disorder. Art teachers, however, are often given a pass for a classroom that is both messy and overcrowded with a build-up of years' worth of materials and miscellaneous items. Not only that, but in my experience, having a cluttered, messy classroom full of miscellaneous *stuff* seems to be attributed to an art teacher as her virtue and brilliance and raises her status to clever genius—at least in the expressed thoughts I have heard from many school staff throughout my career thus far.

Both the data from this study and my years in the field as an educator with a particular interest in understanding the current state of art classrooms have confirmed that there is a preconceived idea prevalent across the field of art educators and within school community members' notions of what an art classroom is and should be under the leadership of a talented and dedicated art teacher. This mindset and the issues that influence it, in my opinion, warrant their own study in order for those in the field to understand their reasons more fully. I have found that art teachers and others will offer a variety of rationalizations for a room filled beyond capacity. One rationalization some teachers make seems based on a belief that if they do not hold onto everything they can get their hands on, one day in the near or far future, they might not have what they need

for their students. This, to me, is the greatest shame, because it is often the result of a fear-based mindset among some teachers. Site 14's teacher seems to be one of those. Whether or not this fear is warranted, operating out of a fear of not having what one needs creates stress for the teacher, which can be passed on to her students. If we are honest about it, this stress cannot be good for either party and does not contribute to senses of well-being; rather, very much the opposite. It is of interest to note that, in the context of this study specifically, most of the art classrooms included here seemed to have a healthy provision of materials on hand. Three schools in urban, low socio-economic settings appeared to have fewer materials available than the other 15 schools.

A teacher may also rationalize holding onto special items, found objects, or extra materials because she is certain she will find a use for them "one day soon." I did that myself with one item in particular when I was teaching, but I never figured out how to use them, and neither did my students, even though I offered them to my students every year. Lastly, teachers sometimes were found to hold on to a particular item because it held sentimental or pedagogical value, even if the item was large and difficult to accommodate in the limited space of their classroom. Sites 4, 14, and 15 all had items of this nature indefinitely stored in their classrooms.

Confusing States of Freedom

Examples:

- Given that one of the most significant battles art teachers face inside their schools takes place within the context of the perceptions held by school administrators and other staff members of what art education is and what it "looks like," including but not limited to the representation of the physical space, a teacher's voice and actions often serve as that which stands in the gap on behalf of her own hopes and dreams, as well as her students'. What can be seen as both a blessing and a curse is that, as a result, art teachers

are frequently offered more freedom and even autonomy than almost any other teacher in the school. The teachers at Sites 3, 4, and 8 specifically mentioned that they enjoy the fact that their art classrooms are located in secluded areas of the school. They appreciate this because the isolation offers opportunities to take up more room in the hallway when they need extra space, or they do not have to worry about the class noise level being disruptive to other classes or offices, or they can act independently and under the radar of general administrative oversight. Site 3's teacher mentioned that it does, however, create a difficulty in collaborating with other subject area teachers.

- More significantly, though, several participant art teachers revealed that they are isolated from the rest of the school staff in terms of the knowledge and understanding of what is needed in the art classroom. Site 2's classroom has been pieced together by the art teacher as she has built the elementary art program from the ground up in a moderately sized private school that has only hired her and begun scheduling art classes within the last six years. The school has provided her a small, carpeted classroom equipped with chairs and tables, a small adjoining storage room, and no sink. The budget for materials seems adequate, and the administration is as supportive as she seems to hope for. The teacher has personally gathered or acquired all of the items used for storing what she and her students need or can handle coexisting with in this small room. She, like many other teachers in this study, makes it work. The teachers at Sites 8 and 10 similarly work aggressively to hunt for and gather solutions to storage problems, and corral willing facilities staff to help with finding ladders, assist with small repair or renovation projects, and move unused or unclaimed furniture into their classrooms so they can utilize them to reorganize. The underlying problem for all this work on the teacher's part is

that she is often the only one in the school willing to evaluate what her classroom's needs are and seek the answers that will work as best as possible to resolve whatever problems exist there. Site 2's teacher said of her administrators, "They don't really know what art education is supposed to look like. Lucky for them, I know what I'm doing" (Interview Data, 2016), as she discussed with me the negotiation and procurement processes she has undertaken with school administrators to equip and arrange her classroom.

- Ironically, in some cases, the same artist-teachers that celebrate the independence that allows them to move at their own will in and around their "artsy" little corners of the schoolhouse, who exercise their autonomy through creative room arrangement and curricular choices, and who also contend with the frustrations that stem from being left alone to find solutions to their classroom needs, do not seem to see a parallel with how they engage with their own students. In *The Learner Directed Classroom*, Nan Hathaway and Diane Jaquith (2012) encourage art teachers to give students a sense of autonomy in creative decision-making, and argue that "successful room arrangement facilitates independent, purposeful work" (p. 61). The teachers at Sites 8 and 10, whom I have observed on several occasions, including the site visits for this study, tend to maintain classrooms in which freedom of movement, a sense of autonomy, and access to materials are limited. Six other teachers demonstrated similar tendencies on the day of my site visits to their classrooms. Not surprisingly, the general practice of participant elementary and middle school teachers was found to limit movement around the classroom, access to materials, and independent pursuit of ideas, whereas high school teachers were more prone to allow their students these "freedoms" to a certain extent.

Excitement and Fun are Sometimes Unintentionally Excluded from the Environmental Affect

Examples:

- Nel Noddings (2003b) speculates that sometimes teachers are "bothered by their students' excitement and fun" (p. 243). The results of this study did not find any perceptible examples of participant art teachers being observably bothered by student expressions of excitement and fun, but there were occasions I observed during site visits that suggest that at least nine of the teachers' priorities were less related to inspiring and engaging students' curiosities and interests through heightening their senses of excitement and fun. Rather, they seemed more duty-bound to keep students' creative environments under carefully maintained and controllable conditions. The results were a noticeably subdued mood and a perceptibly lower engagement in certain students as they worked on the art piece in front of them. In the interest of not offending hard-working teachers, I have chosen not to name specific sites or class sessions. That said, I found several incidents during my 18 site visits in which room arrangement and management decisions impacted teachers' decisions to subdue students' expressions of joy, delight, and excitement, and other emotive responses. I have reached the conclusion, through these observations and personal experience, that there is a fine line between managing behavior through the limiting of materials, color choices, movement about the classroom, and student conversations, and instead, allowing and even intentionally designing a material-rich environment occupied with stimulating activity in order to inspire excitement and fun—thus filling the space with that which often allays poor behavior choices. During my own teaching career, I learned that when my students were delighted by materials, drawn in through personal connection, and interested in exploring artistic practices that seemed exciting to them, their poor behavior choices and

any tendency to be disruptive became almost nonexistent in the art classroom. Noddings (2003b) describes what happens when students encounter "good things" like joy and delight: "When something gives us pleasure, we are inclined to study it more carefully…the end result is deep satisfaction" (p. 244).

Outdoor Access

Examples:

- At Site 6, the 3D studio teacher, whose classroom has direct access to the fenced-in outdoor patio space that consists of a concrete slab, two metal picnic tables, and a grassy area (Figure 5.2), was not particularly impressed with the state of the outdoor space as designed and its subsequent upkeep by the facilities department. He also expressed that he wondered what the intended purpose of the space was in the minds of those who planned it, especially because it offers little aesthetic value or a lively environment from which students might gather inspiration. He illustrated his point by resolutely asserting, "No one wants to draw grass, you know" (Interview Data, 2016). Site 18's outdoor space has a similarly limited aesthetic composition, as described in Chapter IV.

- During the course of my entire career in art education, I have visited few schools that have an outdoor space located near or adjacent to the art room and that has been intentionally designed and arranged for artistic endeavors such as plein air drawing or painting, natural sculptural work, or other related activities. Site 11 is the only school included in this study that has done so rather successfully. As mentioned earlier in Chapter IV, I observed several students from two non-participant classrooms working outdoors on sculpting and painting endeavors, while the participant teacher took her students outside for what she described to me as a "color walk" before returning to the

classroom to continue the lesson discussion and begin studio work. Site 12 was built with large pane-glass windows along one wall, which look out onto a naturally landscaped area just off of the classroom. A concrete slab was poured, and three concrete tables with umbrellas and a large sculpture were added over the years. I actually had an opportunity to tour Site 12 just after it was christened as the new high school art facility at this rural independent school. The art department had raised the funds for this space through a charitable art auction that included the work of well-known professional artists from the region. As a young art teacher, I was quite taken in by the idea that an art classroom could be built with outdoor learning as a core component to the pedagogical and curricular goals of the teacher. In truth, my visit to Site 12 in the early days of my career became a highly formative event for me and inspired me to seek outdoor learning experiences for my students whenever possible. Remarkably, the participant teacher at Site 12, who was the same teacher that gave me a tour of the space over 20 years ago, told me during my site visit that she and her students do not go outside to work very much these days. She mentioned that she is not sure why, but she and her students just do not go out to the patio much anymore.

- Finally, none of the art rooms in the upstairs art wing at Site 9 are equipped with windows. In this wealthy school district's public high school, which is surrounded by lush landscapes, there is no natural light available and no visible access to the world outside. As he was reflecting on this and other design decisions, one of the teachers who has been at this school since before the mid-1990s construction of the art wing, shrugged his shoulders and sarcastically speculated, "Who needs natural light?" (Interview Data, 2016).

This is what I wonder about: The natural world has been inspiring and informing artists for centuries. From cave drawings and paintings of the animals and people roaming the earth before any other form of record keeping is known, to Renaissance artists who studied the human form, to Impressionists who studied how light plays with color, and to John James Audubon, who studied and recorded in detail the aesthetic makeup and anatomy of hundreds of birds, the list of artists who have actively engaged with learning and making that has been birthed from curiosities found in the natural world could continue at great length. Claude Monet famously designed his own gardens and filled them with plants and structures that he was inspired by and wanted to explore on canvas. Yet, we offer our students classrooms that lack color, natural light, or access to the thousands of bits of natural, visual, and other-sensory stimuli that might compel them to create or re-create in a dynamic natural ecology. We contain our students within the four walls of a classroom, as observed in nearly every classroom in this study, in which drawers and boxes and bins are stuffed beyond capacity with materials for making art; but again, as observed in this study, more often than not we tell them verbally and demonstrate through a variety of non-verbal indicators that they are not allowed to touch anything without our permission and they must restrict their creative ideas to those made accessible based on our preferences, not theirs.

But what if we were to consider other ways of thinking about our art rooms and the creative work that takes place there, and henceforth advocate for all newly built studio art classrooms to include outdoor learning spaces that are regarded and treated as essential to the richest and most comprehensive learning experiences for K-12 art students? What if we stopped searching for images of leaves and trees online and created spaces in which these and other natural elements are visually accessible in, around, directly outside of, and/or throughout the art learning environment? Until we do the work to re-imagine the studio art classroom, and given what the data from this study tell me about the somewhat restrictive nature of indoor art classrooms, along with the

meager outdoor learning environments seen in the participant schools here, I tend to agree with Sir Ken Robinson's (2007) sentiment stated during his TED Talk, "Do Schools Kill Creativity?", that "we're educating kids out of their creative capacities."

"Making Do" is Not Making Progress

When the tacit standard among art teachers and their administrators, among others, is that "making do" is "what art teachers do," and when art teachers continue to create coping strategies on their own to make accommodations to their space and to meet their own needs, then a hope for or the prospect of designing spaces in which human flourishing is an intentional desired outcome is unlikely. The oft-unchallenged practice of "making do" seems deeply rooted in the mindset of art educators and is like unchecked weeds in a garden—which can overcrowd soil and leave little room for other, more desirable, things to grow. It will take a paradigm shift in practice and ideology, but I am persuaded that when art classrooms are designed and arranged more intuitively than those studied here, outcomes of increased human flourishing will soon follow for teachers and students alike.

Further, the field of art education has accepted the practice of "making do" as so unremarkable that, while we all have our extreme stories of "making do," we hold up our heads in resolute deference and make it work. We are passionate about what we teach, but every year we rearrange our classrooms and create new strategies for materials distribution, clean-up procedures, and curriculum planning, hoping *this time* we get a little closer to the perfect setup that will allow us to make the most of what we are tasked to accomplish—even if those who have given us the task do not fully understand what we do, how we do it, or what we need to have in our studio classrooms in order to make good things happen there.

To "consider things as if they might be otherwise" (Greene, 1995, p. 16), we must push away from a number of long-established assumptions about why "making do" is

our only alternative, be they preconceived ideas about funding, about the nature, personality traits, or preferences of an artist-teacher, about whose experience and knowledge base are more valued in design decisions than others (between those of architects, school administrators, or teachers), and about the deeply rooted belief that art programs are constantly subject to an economics of poverty, which this study does not cover.

The paradigm shift comes when we rebuff those assumptions and choose to take a different approach altogether. The data collected through this study overwhelmingly support the hypothesis that K-12 studio art classrooms have not been designed, either in the past or currently, for appropriate, fingertip-accessible materials storage and for intuitive use by both the teacher and her students. To my knowledge, there have been no serious endeavors by practitioners or scholars to seek to understand what an art room designed for optimal engagement might need, or what changes in ideology are necessary in order to support students' and teachers' work in "a place where good things happen" (S. Justice, personal communication, 2015). The *Design Standards* published by the NAEA in 1994 and 2015 are helpful, but they are not an attempt to re-imagine or reach for a higher mark. They are an attempt by an existing professional body of art educators to offer a comprehensive list of design and arrangement provisions for an art classroom in the context of traditional forms of art education in the United States. The attempt is not unhelpful, but it falls flat, in my opinion, because it neither addresses the problems so many art teachers already have with the furnishings and equipment listed in the publication, nor does it envision for art classrooms the very things that spark curiosity or delight. As an informative publication, it seems to assume that art teachers all over the country will fill in the blanks with the materials and choices that will result in students' happiness and success if all or many of the recommended *Design Standards* have been met. But given the images that are abundant in Chapter IV, this does not seem to happen as naturally as we trust it to.

A Tale of Two Classrooms

Imagine this scenario:

A lesson is introduced, a discussion sparks ideas, the teacher releases students to pursue those ideas and is eager to see what her students' work will reveal about what they have learned and how their thought processes and imaginative choices develop. There is a buzz of energy filling the space, and students discuss creative plans with the teacher or fellow artists. Five students get up from their tables to explore the materials available—two head straight to colors and textures they are excited to try while the other three mull over their choices; another two are retrieving special tools; three others are getting water and paper towels from the sink area; ten are already hovering over their work and appear to be fully engrossed in working out their plan of action; three more work on easels in a designated area of the room; two others step just outside to continue the plein air paintings they need to complete before moving on to what the others are working on. At the end of the class session, students return materials, tools, and artwork to their familiar "homes," clean their work area, and prepare to leave for the day. When the students have left, the teacher looks around, picks up the two pencils, one eraser, and two pieces of paper that students have left out and puts the items away in their appropriate storage location. She is satisfied that the room is ready for the next class and heads to the door to greet them.

That sounds like a dream sequence to many art teachers. I know this because I served as a K-12 art teacher for 13 years and participated in conversations touching on this topic with many art teachers over the full course of my 28-year career in education. Because of a wide array of problems that art teachers deal with on a daily basis, many have a difficult time with the notion that an art classroom's activities can be filled with vitality and joy while students work collaboratively, respectfully, and independently while self-managing their spatial awareness and shared care of the studio and its *stuff* of

artmaking. After visiting the 18 participating studio art classrooms included in this study and collecting and analyzing data on the design problems, arrangement, use patterns, and other issues, I have come to better understand the difference between educators' *perceptions* of the described problems' sources and what this research identifies as the *primary source* of the problems that limit learning and flourishing in art classrooms. Site 6's teacher shed light on one common (mis)perception of the primary source of "organizational" problems in her art classroom: "Whenever something, it doesn't go right, I always assume it's my own lack of organization and not necessarily anything to do with the space" (Interview Data, 2016). Yet my observations in the schools included in this study suggest that the real source of the larger overarching problem facing teachers in their classrooms is that art classrooms are not designed or arranged for intuitive, active use. Instead, as confirmed repeatedly by the data, "making do" is so deeply imbedded in art classroom culture and in the reality of teacher and student experiences there that there seems little room left, literal or figurative, for any other way of making it work.

Take, for example, this image of a distressed studio art classroom and class session, aggregated from actual scenarios observed during this study:

Students enter the classroom and hoist themselves up on stools that are too tall for their little bodies, or they sit in chairs or on stools and lean over tables that are too small or cramped for their bodies; the teacher plans to lead the discussion using her Smartboard, but it does not seem to be communicating with her laptop, so she steps over to the phone to call the technology team. They come quickly, and she and her students wait patiently for the additional 5 minutes it takes to resolve the issue. The class discussion goes well and sparks ideas among students. When the teacher releases her students to begin their work, they look through the limited materials she has placed in each table's prepared box and begin to work. The teacher's policy is that students are not allowed to get up from their tables without permission—she has chosen this route because the room is small and already cramped with bodies and a

miscellaneous array of the stuff that lines the walls of the classroom and fills every drawer and cabinet (all of which is a bit disorganized—but she is determined to get everything organized at the end of the school year…). Thus, it is easier on her if they stay in their seats. Students who need assistance raise their hands and wait for the teacher to become available as she makes her way around the room. If a student requests a material that has not been prepared and placed in the table's box, she will try to get the item they have requested, but she is not always able to accommodate the requests for a variety of reasons. As the class session draws to a close, the teacher tells students to put all of the leftover materials back in the table's box, has one student picks up the special tool for today's project and asks each table to place all of the unfinished works of art in a pile on the left side of their table. When the students are dismissed, the teacher walks around the room and picks up all of the table boxes and artwork, placing them to the side. She quickly distributes the previously prepared materials boxes for the next class, which is already waiting in the hallway outside her door. She suddenly realizes that she does not have enough time to wash the tabletops, but she will either try to do that after school today or she will have students from the next class wipe down the tables as she gets the next presentation queued up on her laptop. She only has a moment to decide, but she'll make it work….

Given that scenarios like this one are common occurrences, not only for the classrooms observed in this study, but in others I have observed through teacher training, pilot studies, and other school visits during the course of my career, it is not difficult to understand why art teachers struggle to believe that things could ever be "otherwise," (Greene, 1995, p. 16).

What Does the Physical Environment Have the Power to Shape?

In *Building Better Outcomes*, Kenn Fisher (2001) asserts that *"*school architecture can facilitate the transmission of cultural values, stimulate or subdue, aid in creativity, slow mental perception and cause fear and joy.*"*

Keeping what school architecture has the power to shape in mind, consider the following question as it visualizes a scenario outside the context of schools and studio art classrooms:

How can a hospital staff save a life?

Because the environment is set up so that they can.

Disposable, non-allergenic gloves, gowns, and other protective clothing are immediately available in all sizes. Sterilized tools and instruments are arranged and stored for quick access. Medicinal interventions and life-saving equipment are made ready and kept close at hand in case of emergency. Other preparations are made, far beyond my understanding, but without the design and arrangement of the hospital environment to support their efforts, healthcare workers and their patients would struggle immensely, to say the least. Life and death hang in the balance—even more so when the physical environment obstructs the work that needs to be carried out in the space.

Of much less serious consequence, consider this question:

How can a barista create the perfect nonfat, decaf, double-shot, six-pump hazelnut, iced coffee?

Because the environment is set up so that he can.

Cups for dispensing coffee are immediately at hand. A special espresso machine has been designed so that coffee beans are ground and dispensed quickly. Milk options and substitutes, syrup pumps, and ice are pre-positioned for easy access and stocked so that fluid movement from one station to another is as seamless as possible. Customers rely on these design details, even if they are unaware of them, and baristas

would have a difficult time without a design team working behind the scenes to perfect the arrangement.

While the above two situations may seem in many ways dissimilar to the design and arrangement of studio art classrooms, I have long felt it important to look outside the field of art education and its current treatment of art classrooms so that we might consider how to better understand the significance that more fluid access to materials might have on creative activity. Both hospitals and modern coffee bars demonstrate through their design and arrangement that they, in their separate fields, understand the needs of those they serve. When either of these two is able to create an environment that responds well to meeting the needs they aspire to meet, they create a space where "good things happen" (S. Justice, personal communication, 2015), whether it be as serious as lives that are saved, or as superfluous as customers leaving happy as they sip on their idea of the perfect cup of coffee.

Returning now to the notion of what schools have the power to shape in light of the above two examples, when Fisher (2001) asserts that *"school architecture can facilitate the transmission of cultural values, stimulate or subdue, aid in creativity, slow mental perception and cause fear and joy,"* the data from this study suggest that, in the case of art classrooms, there is still much to learn in terms of the consequences of poorly designed and arranged spaces and the benefit of spaces that intuitively support access to a wide variety of materials and the components of art-making that inspire students and teachers in the act of creative making. If fingertip access to materials, unique tools, and specialized equipment aid hospitals and coffee bars alike, why not consider this approach for the art classroom? Given the number of problems found in the 18 art classrooms included in this study, there is little proof that those who build and shape the studio spaces that serve art students in K-12 schools in the U.S. have done the work necessary to understand the actual needs of students and teachers in these spaces. Through the course of this research project, I have become better acquainted

with those needs as I have discovered them, have become more familiar with the problems that exist in 18 uniquely different school cultures, and am growing in my understanding of the nuanced barriers to learning and flourishing in K-12 studio art classrooms across a number of settings.

I am certain of one thing as I conclude this dissertation process: It will take a long-term, spirited, and robust commitment to an iterative process before art classrooms in the U.S. reach the goal of being intuitively designed for optimal learning and flourishing. If we leave things as they are and decide not to pursue the paradigm shift necessary to address the problems found in overwhelming numbers throughout this study, we will never know what "could be otherwise" (Greene, 1995, p. 16). The design and arrangement of art classrooms, like school architecture in general, are poised to shape a new vision for "a place where good things happen" (S. Justice, personal communication, 2015). It has the potential to "transmit cultural values," "aid in creativity," and "cause … joy" (Fisher, 2001) for art teachers and their students, but only if we are ready to use the data collected here to compel us to want better for them and to subsequently act upon what we have learned here.

What Might Human Flourishing Look Like in the Art Room?

The literature review for this study presented a consensus across multiple sources, each considered expert voices in matters related to the needs of children or educational philosophies that support notions of human flourishing. Together, these sources collectively delineate at least eight distinct areas of need that children have. Of particular note for this study, especially as it concerns the longstanding practice of "making do" in studio art classrooms, is that practice-based experts and scholars alike agree that meeting children's needs is not about simply helping them reach basic levels of survival or subsistence—both of which, if we are honest, are synonymous with the

concept of "making do." Rather, the summation of all of the significant things children are said to need, when met, ultimately results in a their ability to flourish and to grow into successful and contributing members of a healthy, thriving community. In order to advance this discussion, then, I will henceforth consider the desired end-result of the met needs of children as parallel to indicators of human flourishing.

All eight of the indicators of human flourishing discussed in Chapter II are worthy of consideration, but unfortunately, there is neither time nor space here to cover each as thoroughly as they deserve. Thus, in the interest of reflecting on the treatment of the physical space in the art classroom through the lens of human flourishing, I will highlight three of the eight indicators that stand out as especially salient to the findings of this study—freedom, personal responsibility, and, to put one word on a larger milieu of "good things," delight.

Freedom

One of the most fundamentally valued needs of human beings, as indicated by the U.N.'s *Declaration of the Rights of the Child* and several scholars discussed in Chapter II, is freedom. In the art room, freedom can be experienced in a number of contexts— freedom to move about (Tuan, 2008, pp. 12, 52; Jaquith & Hathaway, 2012, p. 63), freedom from frustration and want of materials (Jaquith & Hathaway, 2012, p. 61), freedom to think and produce (Greene, 2001, p. 204; Palmer, 2007, p. 87), and freedom of access (Jaquith & Hathaway, 2012, p. 60), to name a few of relevance. Freedom to move about in the context of the art room means that students are not "stuck" in place while attempting to engage with art-making experiences. This could be as simple as being free to stand up while they work, to step back a few feet to review their work without bumping into a box, a wall, or another student, or the ability to walk over to the sink to wash their hands.

"Freedom from frustration and want of materials" connects with notions of human flourishing when the healthy tensions Palmer describes, such as that tension held between a "hospitable space" and a "charged environment" which "energizes learning", (2007, pp. 76-78) creates a space that invites curiosity, and challenges students to take risks in their artmaking by enticing them to become innovative problem-solvers. It seems to be present when the ideas generated by students are met with a well-managed, responsive environment that allows for choices in materials, colors, tools, textures, et al. Somewhere between the teacher who places a limited selection of options in front of students in the interest of behavior management and crowd control and one who allows students free reign and access to materials in such a way that is actually disruptive, lies an "energized" space where access meets intentionality, both on the teacher's part and on her students' part. Jacquith and Hathaway reflect on the intersect between freedom and manageability as well by asking,

> Will lack of freedom inhibit children's exploration? Unlike an artist working alone in a studio creating as the mood strikes, school artists must operate on a set schedule, sharing materials and space. For many, these are challenging conditions. Opportunity for students to think and work independently must be balanced with the need for a calm teacher and an organized studio with sufficient materials for the many classes using the art room," (2012, p. 60).

Further, on a certain level, "freedom of access" and "freedom to think and produce" are rooted in trust; and in art rooms I have often observed, both as a result of this study and as a supervisor of student teachers, that when student artists do not feel trusted to act on their own instincts in the art room, they tend not to invest very much of themselves in the creative process. Alternative to that potential outcome, Jaquith and Hathaway argue that, "students who are intrinsically motivated by activities of their choosing and have full autonomy over content and media are highly engaged and find that their studio time passes all too quickly," (2012, p. 20).

One way of visualizing that tension between freedom and management and what it might look like in the art room is portrayed by Dr. George Szekely from the Center for Creative Art Teaching at the University of Kentucky, who has described the type of art room in which his concept of Play Based Art Teaching allows students to flourish:

> The challenge of an art room is developing a place where few permissions are required. Everything can be touched, all spaces and objects can be used, and one's own ideas lead the way. There is every opportunity to discover what you want to do and how you want to do it. Released from the restraints of "wrong answers," the spirit of working for others, or bending to what everyone else is doing allows freedom in innovation to be experienced, (Szekely's Facebook post, 2018).

Personal Responsibility

Freedom in the art room, however, does not come without responsibility. Parker Palmer (2007) would assess the interplay of personal freedoms and personal responsibility as a tension that "energizes" learning (p. 76). For art students to experience freedom in a way that creates opportunities to flourish, they also need to participate in the responsibility of caring for a shared space that houses the materials that both delight and inspire them and their fellow artists who work alongside them. The United Nations, in their *Declaration of the Rights of the Child* (1959), refers to this as the right of children to "become a useful member of society," whereby they develop a "sense of moral and social responsibility." Greenman (2011) suggests that personal responsibility is part of "belonging to a community," and enjoying an "environment rich in experience." Palmer (2007) submits that students need to engage in "civility" (p. 82), and through shared, collegial interactions with learning, along with mutual care for the learning environment, this can be an enjoyable component of life in the art room.

Delight

In Principle 7 of the *Declaration of the Rights of the Child* (1959), declares that "the child shall have full opportunity for play and recreation," and that "society and the

public authorities shall endeavor to promote the enjoyment of this right." Greenman (2011) also argues that children need an environment "rich in play." Play and recreation delight children, evoke joy and a sense of freedom, and typically involve community connections and shared experiences with other children. In the Art Education Program at Teachers College, throughout the years of my graduate coursework, the notion of "play" in the art classroom has been viewed as an essential component of children's "good" experiences with art learning and making.

In my experience, play is "good" because it is delightful—for adults and for children. To experience delight is to experience "good things" (S. Justice, personal conversation, 2015).

Noddings (2003b) specifically mentions delight as an aim of teaching (p. 252), arguing that "pedagogical methods chosen should make these ends likely." I would further this argument by saying that the *environment* should be built to support the pedagogical methods that make delight likely. The data from this study suggest, however, that neither the environments, in their current states, nor the pedagogical methods used during my site visits aim at delight as a preferred outcome. My experience has been that the question of delight rarely comes up in conversation among art teachers, whether as part of the dialog related to this study or in other conversations I have had with fellow art educators over the years. I would argue that we *know* what delight looks like when we provide good things for our own children. We are eager to see the delight expressed in their faces as we offer them what we know they love. We seek to inspire that look whenever we are able. If we know that the huge box of 64 or 120 brilliant colors in a box of crayons will thrill them and offers what we imagine to be the fullest of material experiences for their creative minds, that is what we will pick up from the shelf at the store when we purchase school supplies, a birthday present, or simply something "good" that we want to give our children. To reiterate the point, we *want* to

give our children good gifts, particularly when they are our own children. We *want* them to flourish and be made happier by the things that delight and excite them.

For me, the question becomes, how do we carry that mindset over into our schools—or more specifically, into our studio art classrooms? How does an art teacher prepare, arrange, and manage her classroom and the materials in it so that her students experience delight when they are choosing colors or exploring the tactile elements of clay or paint or oil pastels? Noddings (2003b) suggests that, as students learn through play, teachers should "watch their own students: observe, reflect, and monitor." She adds, "Fun doesn't have to end with elementary school. Teachers should study the recreations associated with their subjects" (p. 243). Further, she holds no punches when she describes students' experiences at school as having been "boring" for the last 50 to 60 years, (Noddings, 2003b, p. 244). Given her advocacy for an ethic of care in education, it is not a surprise for her to argue that infusing educational engagements with fun would help students have a more well-rounded and positive experience. She asserts that "when something gives us pleasure, we are inclined to study it more carefully" (Noddings, 2003b, p. 244). Most would vocalize their agreement with a sentiment that expresses that the art room should not be a place that is boring in our schools and, by its very nature, can and should offer our students pleasure. Yet, given the findings of this study, one might question how the participant studio art classrooms, in their current conditions, function as inviting and inspirational spaces that allow students and their teachers to experience joy and delight, and further, to flourish, especially if the conditions in classrooms are not only less than ideal, but in some cases, downright destructive to senses of well-being and learning.

Flourishing Sets the Bar *Above* "Making Do"

Aside from the three primary sources that describe indicators of human flourishing including the three described above, dictionary definitions of "flourishing" include words and phrases such as: "to grow luxuriantly," to "thrive," to "prosper," the "height of success" (Merriam-Webster.com, 2018), "healthy or vigorous growth, especially as the result of a particularly congenial environment" (oxforddictionaries.com, 2018), and a plant or animal that "grows well because the conditions are right for it" (collinsdictionary.com). In an interesting parallel to the title of this dissertation, the Cambridge Dictionary identifies the term "making progress" as a synonym of the verb "to flourish" (dictionary.cambridge.org, 2018). So, when Site 13's teacher argues that "It would be a luxury to think about how to use an art room differently … because this is what we've got. This is what we're used to" (Interview Data, 2017), the harm of the "make do" culture prevalent in K-12 art education in the U.S. becomes more clearly visible. We are evidently not reaching a standard of flourishing when the teachers interviewed for this study use statements such as the following to describe various aspects of their work with respect to the influence of the physical space: "I mean, we make it happen, but its challenging" (Interview Data, Site 1 Teacher, 2016); "I try to work with what I have and to make it work" (Interview Data, Site 7 Teacher, 2016); "We have always done with what we have been given" (Interview Data, Site 13 Teacher, 2017); "At least I have *a* sink..." (Interview Data, Site 5 Teacher, 2016); or the many phrases that Site 12's teacher used during our interview: "I make do," "They're livable," "You work with what you get," "That was not the dream…," " We've adapted," "That's OK. We'll live with it," or "I wasn't in love with it, but that's what we got so I had to work with it" (Interview Data, 2017). The question is: Are we bothered by these words and what these teachers struggle to accomplish with, in, through, and sometimes in spite of, their classrooms?

Noddings (2003b) contends that "we should be prompted to provide better conditions by a collective uneasy conscience. Our happiness should be threatened by the misery of others, and children [*and, I would argue, their teachers too*] should not have to earn decent living and learning conditions" (p. 242, emphasis mine). Regarding teachers' experiences in their own classrooms, Noddings argues, "Clearly, if children are to be happy in schools, their teachers should also be happy. Too often we forget this obvious connection" (p. 261).

If we are bothered by the words of these art teachers, and by what this study has made known to us, what can we do about it? We can begin by raising the bar, not just to what is acceptable, but to what children and their teachers deserve: "a place where good things happen" (S. Justice, personal communication, 2015), and where delight and other indicators of human flourishing are intentionally imbedded in the design of studio art classrooms and our plans for the art learning that will take place there.

The Impetus for Raising the Bar

It is my hope that through this research, light has been shed on the struggles art teachers specifically face in regard to the design and arrangement needs of the physical spaces in which they teach, that it becomes more evident that these spaces, in their current condition, do not support art learning as well as they might, and that we might acknowledge that because art learning at times happens *in spite* of the conditions of studio art classrooms, rather than *because* of them, students' and teachers' creative lives within the art classroom are often at odds with notions of human flourishing.

It is important to end this discussion by considering why "imagining things as if they could be otherwise" (Greene, 1995, p. 16) is beneficial to art teachers and their students, given what we now understand about the current state of studio art classrooms a little bit better than we did before. Palmer (2007) theorizes, *"What we teach will never*

'take' unless it connects with the inward living core of our students' lives" (p. 32). How do we drive what happens in our studio art classrooms so that it "takes" and "connects with the inward living core of our students' lives"? We have to design and arrange them so that that is possible. Maxine Greene (2001) argues that the arts allow people to "make a space for themselves to fill with intimations of freedom and presence" and "provide the key to the door of the imaginative life … and that means a key to untapped possibility, to a sense of what is not yet" (p. 202). What better reason is there to raise the bar?

A Place to Start

As I stated in Chapter I of this study, I am not talking about fairy tales and pixie dust here. Nor am I seeking to validate the idea that well-organized, pristine classrooms that lack signs of life and vibrant activity are the goal and would better facilitate human flourishing. I *am* proposing, rather, that studio art classrooms might be more likely to "engage our students' souls" (Palmer, 2007, p. 20) if we henceforth consider designing and arranging them with the following questions, or ones like them, in mind:

- Does the space *invite* and *welcome* the child/adolescent/adult artist?
- Is the space *hospitably* designed, arranged, and managed?
- Does the space *delight* the senses and *encourage* curiosity?
- Is the space *dynamic*, *lively*, and *responsive* to the soul of an artist, whether he be the student or the teacher?
- Does the space *generate* ideas through its design and arrangement?
- Does the space *inspire* (creative thinking, exploration, play, risk-taking)?

Conclusion

The studio art classroom has the power to shape our students' and their teachers' creative experiences like few other spaces in schools. It can offer students a range of "good things" to enjoy, while encouraging them to take risks in a safe and nurturing environment, inviting them into a space that welcomes their joy and excitement about the *stuff* of art-making as they explore, learn, and create. But the opposite is true as well. It can tell students that they are not particularly welcome in this space through sloppy arrangement, overcrowding, and awkward design elements, all of which were observed during the course of this study. It can shut down ideas due to obstructed access to materials, signs that say, 'Don't touch my stuff!," physical barriers that highlight teachers' distrust of students' ability to make a variety of decisions, and drawers and cabinets that do not accommodate materials or facilitate fluid movement and responsive access.

We have work to do if we want to raise the bar from "making do" to flourishing. It will take a collaborative effort to adjust our understanding of the essence of the art room, to build upon that new knowledge with a reshaping of our understanding of what is possible, and to implement real change on behalf of students and their teachers within the context of studio art classrooms. Chapter VI will discuss ways in which art teachers, architects, school administrators, facilities planners, and teacher training programs can engage in exploring this topic further and actively participate in designing and arranging art classrooms that work more intuitively and allow teachers and their students more opportunities to flourish in one of the most unique environments housed in our schools.

Chapter Summary

This chapter addresses the power of misperceptions that are commonly believed about the studio art room and how those beliefs hinder understanding about the potential

for "good things" to happen in a well-crafted creative environment. It further argues that the work of investigating the problematic design and arrangement issues found in the 18 art rooms included in this study, and many others like them, has not yet been done; neither by the professionals who teach in these spaces nor the ones who build them. As this research project demonstrates, simply building new schools has not solved the situational problems that are prevalent in many art classrooms. The chapter then examines a number of "make do" scenarios found in both old and new participant schools, as well as design and pedagogical decisions that seem to have compromised the likelihood of student and teacher flourishing. The chapter concludes by offering insight on what human flourishing might look like in the context of studio art classrooms.

Chapter VI

EDUCATIONAL IMPLICATIONS

Initiating a Conversation

Chapter Overview

This chapter addresses practical implications that emerge from the findings and discussion chapters of the study. It lays out the choice between maintaining things as they are or contributing to a conversation between art education colleagues and professional across other fields that influence the condition of art classrooms. It further suggests participation in Design Thinking strategies to reconsider how the design of furnishings and materials packaging might be improved to enhance intuitive use and fluidity of movement about the space. Finally, the chapter offers an initial attempt at designing an art room that takes the findings of this study and notions of human flourishing into consideration.

Practical Problems Invite Practical Implications

This dissertation's implications for the design and arrangement of studio art classrooms are most aptly moored in practical settings and in what are often called "real world solutions." While theoretical implications are evident in the data analysis and discussion components of this study, my conclusion at this point, based on many hours

in classrooms while conducting this research project, years spent teaching and observing in art classrooms, and seeking to understand the existent physical features and provisions found in each unique space, is that the most compelling and immediate implications lie in practical outcomes for art students and their teachers. The data suggest that not only are the problems found in this study present in a wide range of schools and school types, given the diverse selection of schools included here, but also that these problems could be addressed and dealt with comprehensively in a relatively short amount of time if we start by incorporating the information presented here into productive conversations with school designers and administrators, and using it as a springboard to make a more decisive impact on the design and arrangement of studio art classrooms in the years to come. Looking at its implications any other way would be to see a house on fire, shrug our shoulders, and walk away.

That statement may sound extreme, but as the primary researcher for this study, as an art teacher who cares for my students and their ability to flourish in the midst of creative activity, and as one who cares for my colleagues and their students, I am left with a strong sense of urgency to fight the "fire" that every day threatens art students and their teachers from thriving in their creative environments. I have peeled back the layers, opened up all the hidden spaces, studied the stacks and stacks of *stuff*, and watched as teachers and their students navigate working in visual arts learning environments that are rife with use and function problems. I have seen firsthand the things that disrupt, trip up, and sometimes wreak havoc on multiple art teachers' noble and meaningful endeavors. And although schools nationwide have a wide variety of systemic problems, this dissertation's original intent and resulting implications are based, not on blaming systems or budgets or other institutional constructs, but on the thesis that little is known or understood about how best to design, arrange, and equip studio art classrooms in K-12 schools. My conversations with school architects, facilities

personnel, and administrators, experienced concurrently with this research project, further support this thesis.

Consequently, if the results of this study suggest that the design and arrangement of art classrooms are problematic for teachers and students in multiple categories of provision, use, and function, and that both older and newer classrooms face similar issues, it would seem salient to this study to address the concerns raised here directly rather than to mull over reasons why things are as they were found to be in the 18 participant classrooms—especially when there are professionals across a wide range of fields equipped to participate in creating practical solutions to the problems highlighted in Chapter IV of this study.

Architects, product engineers, school administrators, facilities personnel, art teachers, and art teacher training programs are all key contributors whose collective work can shift prevailing mindsets and practices, who can begin to re-imagine the contemporary K-12 studio art classroom's design and arrangement to better shape an understanding of what its day-to-day purposes and needs are, and to institute changes that might begin to write a new narrative for how these classrooms are able to support and inspire the work and learning of art students and their teachers.

What Happens if Nothing Changes: A Continuum of "Making Do"

Aside from what the findings have provided in terms of creating a better understanding of the problems that affect life and learning in the 18 studio art classrooms observed in this study, I have been following other sources that continue to add insight into professional practices that preserve a continuum of "making do" in the design and arrangement of art classrooms, through the fields of school planning and design, as well as education. What I have found points to presumably well-meaning

professionals attempting to find "solutions" to either vague or hyper-focused problems within the vacuum of their own fields. Thus, their solutions specifically related to studio art classrooms do not seem to succeed in generating new knowledge poised to inform other professionals outside that vacuum, nor does a successful interplay appear to exist between the previously mentioned fields to answer age-old questions about best practices for handling day-to-day design and arrangement issues that exist in practically every art classroom I have ever stepped into—an extrapolation from years of personal experience that seems to be supported by the findings of this study. Certainly, the lack of productive problem solving for art classrooms is not a result of intentional negligence on anyone's part, but it seems that the notion of working through design and product problems across fields has never really crossed anyone's mind or has never been pursued toward a comprehensive resolution of design issues specific to K-12 art education. This is not surprising, but the implications from this very real absence of progressive innovation tend to make life in the art room much more difficult than it needs to be, in my professional opinion. *As an aside, it is also a bit telling, as to the want of attention to product development, when vendors can offer a catalog or two full of science room furnishings and equipment but can only send a general catalog and point to five to ten pages for art room provisions.*

At any rate, school administrators, facilities personnel, and art teachers are concerned with the day-to-day issues of their own jobs within a particular school, with the art teacher sometimes being the only one on-site who passionately advocates for whatever she feels she needs most in and from her classroom—as has been highlighted in the findings of this study. School administrators and facilities personnel are tasked with responsibilities that stretch them far beyond the reaches of the art room, and art teachers and their classrooms must wait in line for whatever attention they can get,

whenever it is available to them—a problem also mentioned by the teachers who participated in this study.

Architects, school designers, and educational planners build or remodel schools with their eyes on a different set of problems. They take on a very large task that includes, but is not limited to, land analysis, budget creation, building design, public works implications, neighborhood and utility planning, zoning issues, accessibility accommodations, energy efficiency models, etc.—and all of this before they are ready to consider the specific needs of content areas, ages of students served, and functional aspects of common areas, among a large variety of other planning minutiae.

Everyone is working hard on their own piece of the puzzle. Everyone seems to be concentrating on what is in front of them. And when architects, school administrators, facilities planners, and art teachers do talk, typically at the outset of a new building project or planned renovation, I have found, both as a result of this study and as a product of many conversations with architects, school administrators, and art teachers over the years, that cues are missed, words are spoken but not heeded, concepts are misunderstood, or, as often happens, the limited industry solutions already accepted as standard for art classrooms are purchased and installed, with not many alternative options presented for consideration. Post-construction, each stakeholder returns to their separate role, with architects and school administrators leaving what they believe to be a well-situated art classroom that is reasonably in line with what the art teacher asked for, while the art teacher enters her shiny new space and begins the task of making it work as best as she is able, even as she stumbles upon a motion-sensor sink that creates brush cleaning problems (Site 1), a sink that has no adjacent countertop (Site 18), electrical outlets that create tripping hazards (Site 6), or cabinets that are not well-suited for the materials on hand (Site 8).

Project by project, problem areas are inadvertently designed and constructed by well-meaning design teams, resulting in new art classrooms that are sometimes one-half to a quarter of the recommended size, storage options that create as many problems as they attempt to solve, few locations designed into the studio space for storage of artworks in-process, and myriad other similar problems, as were found in participant classrooms and described in Chapter IV's findings.

Figure 6.1 shows the new art classroom housed in an award-winning urban community school not included in this study. The school itself is acclaimed as cutting-edge in many of its educational practices, and the still-growing school building site has been developed to accommodate the specific pedagogical aims and holistic approaches to education that its founders want to provide for its students.

Figure 6.1 Art Room from Recent School Tour

Given all of the innovative construction details I was being introduced to on this school tour, which were meant to improve students' and teachers' school lives and learning potential, I was eager to see how the design team had envisioned the art classroom, so I made a quick detour to see it. (As another side note, it seemed that it was not on other tour attendees' "must see" list, which is likely an indicator of the art classroom's still-low priority among architects and school planners as they compare notes, study new building sites, and celebrate each other's successes.) I met a charming

art teacher in the classroom who reminded me of many I have met over the years, but I was a bit underwhelmed by the art room in this modern, brand-new, innovative, and lively community school. Will it suffice? Yes. Is it as extraordinarily well-thought out and designed, as are other parts of this highly celebrated school building? No. Even with a cursory glance at the classroom, it looks like many of the classrooms included in this study, and after careful examination of the photographs after my visit, it appears to have similar problems related to the NAEA recommendations as were found in participant classrooms in this study. Will the art teacher and her students make do with the classroom the way it is at present? Absolutely. It has been done before, and it can be done again here.

A different but familiar set of scenarios that will likely remain unchanged in the continuum of "making do" if no actions are taken as a result of this study or others like it involves a new and interesting component of the narrative that has emerged as social media becomes an active part of telling one's story. Many art teachers are taking to Facebook and Instagram, among other platforms, to communicate, share ideas, and attempt to address problems they face in the context of their own classrooms, but that they assume might also be experienced by their contemporaries. I have joined a few of these groups so that I might observe and learn from large groups of art teachers who are sharing their questions, comments, and ideas while supporting each other as colleagues. Most teachers who join these social media communities are seeking some of the help and encouragement that their own schools are not able to offer them for a variety of reasons. While joining collegial communities on social media platforms is certainly of great benefit to art teachers, especially if they are the lone art teacher at their particular school, I have found that online art education communities are as at-risk of existing within a vacuum as they are if they are situated within smaller collegial communities offline. The answers they offer each other can be insular and strongly

emblematic of a continuum of "making do" and seem to preserve solutions that, while

indicative of Design Thinking ideations, are what Noddings (2003b) means when she

states, "We should be prompted to provide better conditions by a collective uneasy

conscience. Our happiness should be threatened by the misery of others, and children

should not have to earn decent living and learning conditions" (p. 242). Our discomfort

should not be motivated by the teacher's attempts at finding a solution to her problem,

but on *behalf* of the teacher and her students when her makeshift solution is the most

reasonable choice and, oftentimes, the only option she can come up with on her own.

For example, recently an art teacher posted on one social media forum

(Figure 6.2) that her best solution for making glue bottles (a standard consumable

material found in every art classroom) easily accessible and upright was to glue toilet

paper rolls together to use as makeshift slots that line a store-bought bin—a bin she

most likely purchased with her own paycheck. It occurs to me that we should be better

equipped to offer her and her students more sustainable solutions than this:
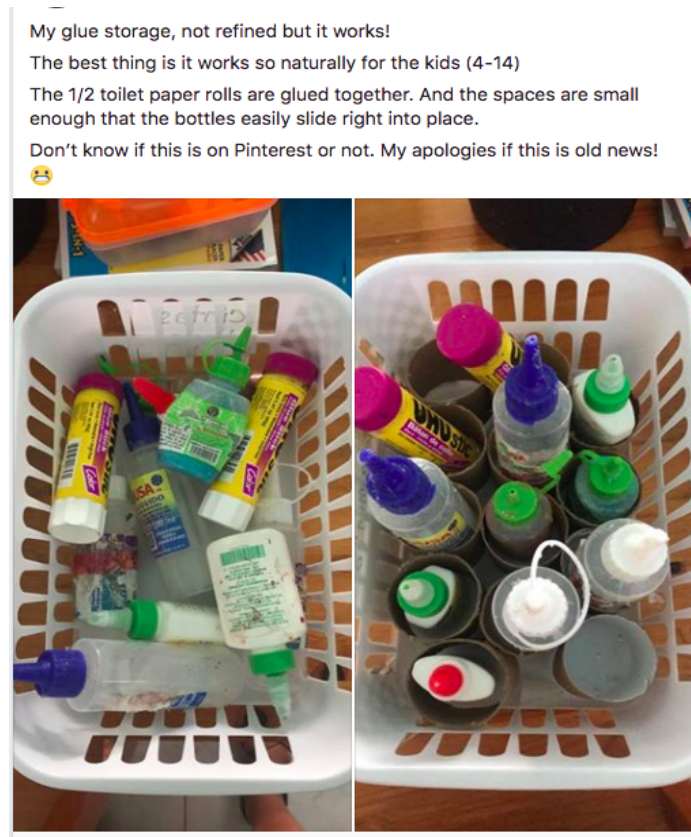
Figure 6.2. Recent social media post.

Teachers in all content areas tend to share ideas and offer creative and sometimes genius solutions for the nuanced functional problems they encounter in their classrooms. And it is widely known that teachers in schools across the U.S. use their own paychecks to purchase extra organizational and consumable items for their classrooms. But the art room is a wholly different learning space than most content-area or grade-level classrooms. It cannot function in its curricular, pedagogical, and creative capacities if it is not fully supplied with consumable materials—glue bottles being only one of potentially thousands of items housed for eventual use by an art teacher and her hundreds of students throughout the course of any given school year. It might seem obvious that toilet paper tube liners used to hold glue bottles upright is not a sustainable solution for the average art room serving upwards of 500 students a week, but this example is one of many I have found that demonstrate the nuanced arrangement and

accessibility issues related to consumable materials for which any given art teacher in any given art classroom seeks resolution each school year.

Figures 6.3 and 6.4 offer two more examples of posts from art teachers engaged in conversation about their classroom spaces within social media art educator communities. Both are on the topic of classroom furnishings, with both teachers paraphrasing the comments made by their administrators regarding a need to purchase or replace furnishings to aid in studio art classroom arrangement and management. Both teachers also state that they do not know where to start in looking for furniture, or that the options they have found do not suit their need.

Figure 6.3. Recent social media post 2.

I need storage help. I have this fantastic room, but it is a multipurpose room, and my principal says it needs to look less like an art room when I'm not here and they use the space for meetings. Currently I move supplies over to condense space and cover them with plastic tablecloths when I'm not here otherwise people help themselves to supplies. I cannot put all supplies away in cupboards because I have a 30 minute morning and afternoon duty each day I'm here. He suggested I look at other furniture options, but I don't even know where to start. Because of two sets of double wide swinging doors and an unused, mounted smart board, the wall space is lacking. Any suggestions??

Figure 6. Recent social media post 3.

The posts in Figures 6.2, 6.3, and 6.4, and ones like them fill the community pages of art education social media groups and indicate the ongoing necessity of "make do" scenarios and unanswered design questions that exist in art classrooms within many U.S. schools. As these social media posts imply, K-12 teachers are attempting to find solutions, seek out resources, and generally do their best to make their classrooms work in support of their curricular and pedagogical goals.

An Alternative to Maintaining Status Quo:

Initiating a Conversation Among Colleagues

In Chapter I, based on early conversations with professionals I had recently met who were involved in school design, I suggested that those whose separate fields are collectively, although not always simultaneously, involved in creating, designing, implementing, equipping, arranging, and managing studio art classrooms, might benefit from engaging with one another more intentionally than what I was finding to be the case at the outset of this research. Nearing the end of this study, I have more reason to believe that if architects, educational planners, school administrators, facilities personnel, product designers, and those with various roles in the field of art education, including art teachers and those who train art teachers, were to begin participating in a robust conversation about the important role the studio art classroom plays in K-12 art education experiences for art students and their teachers, "good things" might begin to emerge. The interplay of ideas and perspectives, along with collaborative contributions from various areas of expertise, may ignite and influence potential design innovations that could have significant impact on the problems that are shown by the data from this study to exist across many school types and systems. One by one, each problem could be addressed, while some may even potentially be resolved through outcomes of iterative design processes.

In the interest of initiating that conversation across the fields, I joined the Association for Learning Environments (A4LE) about five years ago and have met and exchanged ideas with school architects, facilities managers, educational planners, furnishing vendors, and school administrators while attending three of the last four of their annual LearningScapes conferences. This past November, I presented some of my findings as a breakout session at the 2018 LearningScapes conference and found these

professionals very interested in hearing what educators can tell them about their content-specific learning environments. The breakout session I presented was a small attempt to raise awareness among school designers and leaders about the day-to-day problems art teachers and students face in their studio art classrooms as revealed by this study. I was encouraged by the attendees' responses and interest in the subject. In the coming months, the A4LE organization has offered me two other opportunities to strengthen and further ignite a conversation about the findings of this study with members of their community. Finding a hospitable space to present this research to colleagues who are influencing the design and arrangement of many new schools being built today provides hope that we in the field of art education can begin to help these dynamic designers and decision-makers gain new knowledge about our lived experiences in our art classrooms. It is hoped that they will understand the problems we face as each one is more clearly defined and be moved by this new insight to empathize with art educators as we seek an end to "making do" as a way of life. Together, we might be able to work collaboratively toward constructing, renovating, or rearranging delightfully creative learning environments in which our students and teachers learn and flourish in inspiring ways.

But that means art educators need to recognize their powerful potential in contributing to a conversation about their classrooms' needs and specific problem areas. To advance the contribution of the field of art education in helping to craft more intuitively designed studio classroom spaces, art teachers need to know how their classroom as a physical space hinders or supports their curricular and pedagogical goals, whatever those may be. This is where teacher training programs might come into play, in working with new teachers to help them envision their studio classrooms as spaces that are complementary to their curricular and pedagogical goals. Of course, experienced

teachers need to consider the implications of their classroom's physical state on their teaching goals as well.

When Site 1 was in the planning and design stages of the now five-year-old building that houses both the elementary and middle school art rooms, the art teachers participated in a variety of activities with the architectural design team that were meant to result in a well-designed and equipped, relatively problem-free, art learning environment. During the early stages of the project, the decision was made to place the shared kiln room next to the middle school art room, which is located one floor down from the two elementary art rooms. The elementary art teachers requested that a door to that kiln room be placed in the hallway outside the middle school art room so they could access the kiln without bothering the middle school art classes. The elementary teachers' request for unfettered access to the shared kiln room was not simply a "nice idea"; it was a decision with curricular and pedagogical implications for both grade levels served by the shared space. Unfortunately, when the art teachers were shown the plans in blueprint, they did not study them closely enough to see that the only access point to the kiln room had been designed to be located inside the middle school art room, thus significantly limiting the elementary teachers' use of the kiln. Additionally, the elementary teachers stated that the middle school art teacher now tends to load the kiln at her leisure, over a period of days sometimes, and has inadvertently become the primary proprietor of the kiln.

In my opinion, this outcome serves as a cautionary tale that may help us understand why it is imperative for art educators to participate more robustly in conversations, both among ourselves and with other professionals, about what we need in the physical features of our art classrooms and how those features support art learning. Additional narrative data from this study offer insight into very specific problems, like the one detailed above, that were found among many participant schools

and, as such, suggest a range of conversation starters at the ready. Yet, one of the most significant findings of this study is that art teachers are prone to take what they get, in terms of the art rooms provided to them, and make the most of it. In other words, "making do" has become a habit of mind among the art teachers in this study. Unless we work together to counteract that mindset, to offer alternative perspectives on what is possible if we work collaboratively to create art classrooms designed intentionally to address the problems raised through this study, we may stall the conversation before it starts.

Progress can certainly advance through the involvement of even a few, so when I presented early findings of this research at a breakout session for the NAEA's 2017 annual conference, I was encouraged to meet a number of art educators interested in engaging in a conversation about the issues raised by this study. As I presented the findings to the art teachers who were in attendance at the session, their verbal and nonverbal responses implied that their own classroom experiences corresponded with what my research has been telling me. Additionally, when I am involved in conversations with many of my art education colleagues in various other settings, they seem very interested in talking about this topic. Still, a few have appeared at times to be unmoved by the idea that the findings of this study might generate new approaches to addressing the problems that are often present in their art classrooms. This is not surprising, given that much of what I have learned as a result of this research indicates that teachers feel powerless to do anything *but* to "make do" with the classrooms and products made available to them by their school leadership and other professional partners and industries.

Design Thinking as Methodology

In Chapter III, the concept of Design Thinking Stages 1, Empathy (or seeking to understand the problem) and 2, Define (the problem) (Simon, 1996) was introduced as a part of the methodological approach that would be utilized in this research's data collection and analysis stages. As we consider implications that stem from this research project, then, it may be advantageous to continue using Design Thinking strategies to generate ideas for addressing the problems found across participant classrooms (Stage 3), create potential design features and products that aid in resolving these problems (Stage 4), and test those ideas and products in art classrooms (Stage 5).

Design Thinking is an iterative way of working through a problem, with the hope of finding a better way of accomplishing what needs to be accomplished. It will ask the question, "If not this, then what?" In the art room, it will seek to understand the purpose of cabinets, sinks, sediment traps, flat files, and dozens of other products and work to define the problems that hinder the purposes of each item. If the sinks are not easily used by students, as those at Site 8 were not, why are they not working as intended? What could work better? What adjustments need to be made in order to ease the burden on the teacher and her students? Similarly, if industry-standard flat files are too large for the papers stored in them, thus making the papers difficult to keep separated, well-organized, and easily accessible, what would work better? If industry-standard cabinets end up empty or overstuffed because art materials are not sized or packaged to fit inside the space and be effortlessly retrieved, what would work better? Will changing the materials' packaging help? What about possibly changing the design of the cabinetry? Perhaps changing both the materials' packaging and the design of the classroom's cabinetry will produce a more effective result.

Envisioning Possibilities

Based on what we have learned from the 18 studio art classrooms observed in this study, I have used the findings to "construct" an image of how studio art classrooms might be designed and arranged with both the NAEA *Standards* and human flourishing as contributing voices. It should be noted that the following images are not to be considered prescriptive, nor a final solution in the attempt to address or resolve specific problems found in some of the participant art rooms. The renderings included here are merely meant to serve as *one* way of envisioning certain situations in newly constructed multipurpose studio art classrooms. Possibilities of design strategies are potentially endless, and these ideas are intended only to aid in creating a visual that might help to initiate a conversation about addressing the issues raised as a result of this study.

In an effort to work out some initial ideas, I hired a freelance 3D SketchUp artist, who often works for architects, to render images of my ideations. This particular artist has related experience working on school construction projects, so I gave him some leeway in interpreting my suggestions for materials and features. Our different vantage points and inexperience with the other's knowledge base inevitably resulted in a few features being lost in translation. Where it concerned NAEA recommendations or specific problems that arose from the research, I gave very specific measurements or design instructions and noted the pedagogical importance of preserving those details.

Overall, I was pleased with the outcome of our first iteration of the collaborative work. Yet, this first effort offers further insight into a design process in which the two contributing voices know very little about each other's work and are limited by time, budget, and other factors. This is similar to what happened in the design and construction of Site 1. Where the architectural artist's vision diverges from the educator's, or one party does not understand the other's basis for a decision (in the case

of mine, the vision has been informed significantly by the findings of this study), the architect, from what I can determine, weighs other factors that are "tried and true" within their own field and places those factors above the educational implications that may have been raised but not stressed as essential to curricular and pedagogical outcomes. Based on the data related to those teachers at Sites 1, 6, 8, 11, 12, 17, and 18, who each spoke with the school architects or design team prior to their classrooms being built, this is the state at which the design conversation between the designer and the educator has ended.

The resulting disconnects between the pedagogical and curricular goals of the art education program and the classroom as it has been designed and constructed are demonstrated through my own experience in working with the SketchUp artist. I do not see this result as a negative outcome, though, because the experience simply educates me on the architect's way of understanding school buildings, and art rooms specifically, and offers me insight into how better to communicate with the designer in future iterative stages of the design process.

That being said, in Figure 6.5, a floorplan that includes 1325 square feet of open classroom space, a 400-square-foot storage room, a 120-square-foot teacher's office, both with direct access to the art room, and an adjacent outside kiln room meets the NAEA recommendations for classes of 25 students. Additionally, three sinks, immediate integrative access to an outdoor garden studio space, and in-class storage for student artworks and consumable materials are designed into the floor plan. Data from the study regarding students not having a place to store personal belongings led to the inclusion of an entryway that houses student book bags and coats, taking them off the ground and away from work areas. The following design details are adapted versions, based on problems described in Chapter IV: Cabinet storage has, in theory, been replaced with one 20-foot wall of custom-designed materials storage units, although this is one of the

items lost in translation in the floorplan. The opposite wall houses over 100 12" x 12" cubes for 3D student works-in-progress. Finally, two separate table sizes are constructed for both sitting and standing options, although the differences are not easily discernable in the renderings.

In terms of the aspects of design related to notions of human flourishing, the ideas are relatively simple, but the application of those ideas are intentionally generous in both the floorplan and in the detail renderings in Figures 6.6 and 6.7. The purpose of this seemingly over-the-top approach is in the interest of envisioning a number of "good things," both for students' well-being and their learning potential in an environment that is rich with visual inspiration.
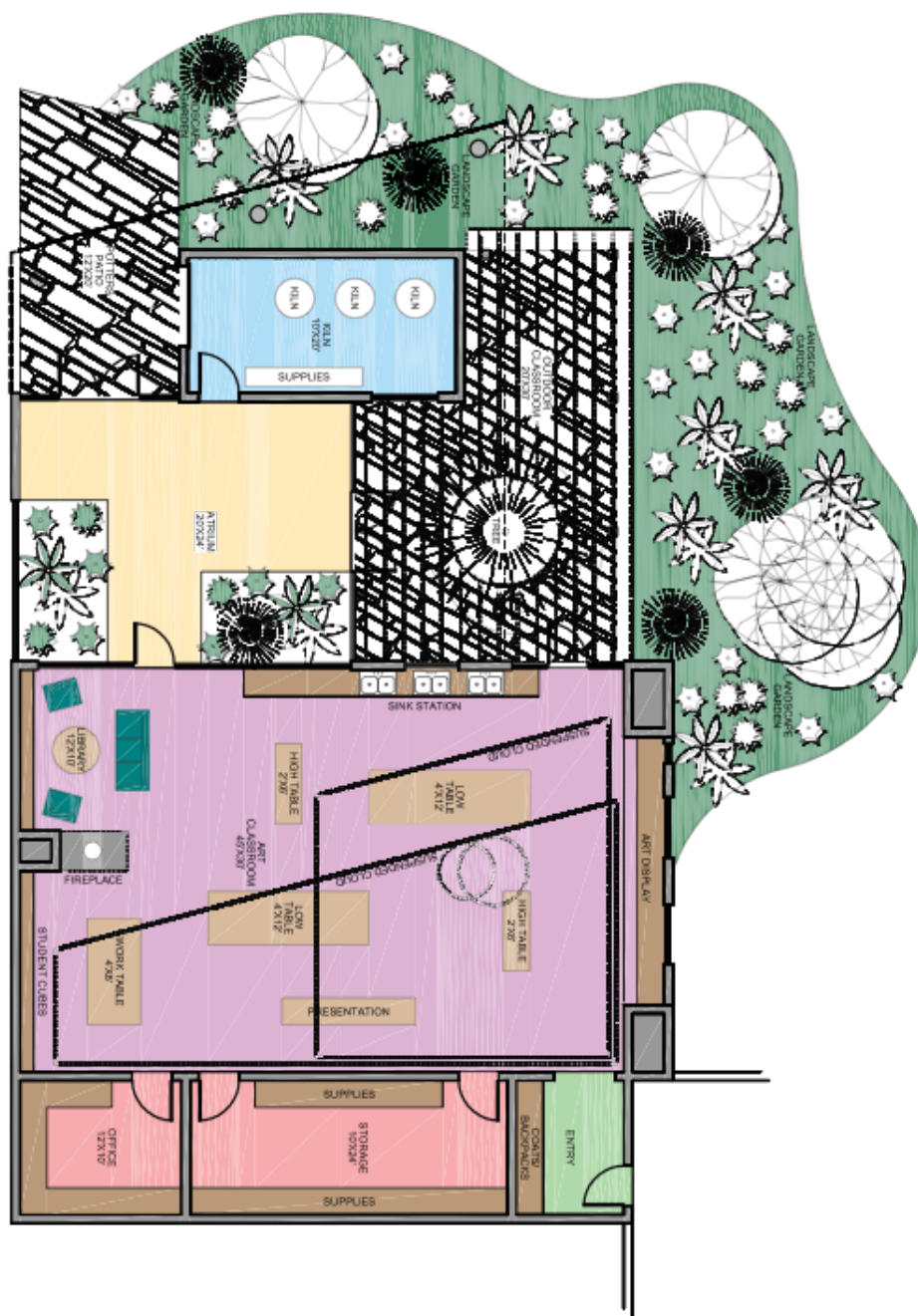
Figure 6.5. Floorplan with NAEA design standards and human flourishing

considerations.
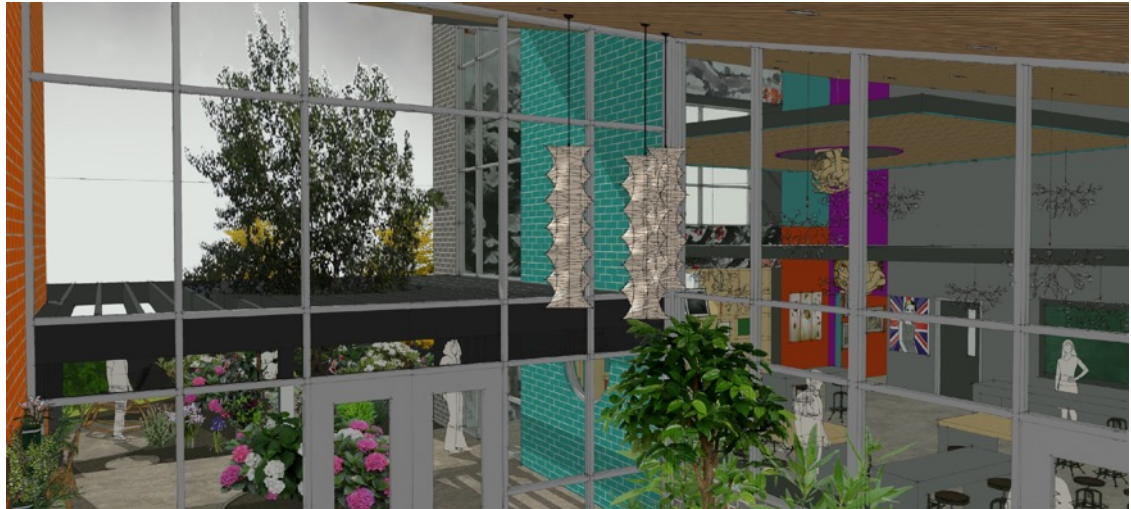
Figure 6.6. 3D Rendering 1.

Figure 6.7. 3D Rendering 2.

For example, the outdoor patio space is connected to the indoor space as intricately as possible, with an intended easy interwoven access to both. The outdoor space is, in this example, an integral part of the studio space and is filled with visual stimuli and a natural landscape in which students might engage in traditions of plein air painting, drawing, and sculpting, in addition to other possible art activities yet to be envisioned. This ideation of an art room connected to the natural environment is in

keeping with Parker Palmer's (2007) concept of centering study around the "great things" of a particular subject matter (p. 110), which will allow them to learn from the things themselves, rather than photographs of them. In all but one of the classrooms included in this study, photographs or digital screens were the primary sources of visual information about the natural world. But what if a bit of the natural world was intentionally planned into their art education experiences so that they might gather around and study nuances of color and pattern and texture and other delightful things?

The colors and materials choices found within the structural design of the art room, both inside and outside, are also intended to evoke senses of delight, surprise, excitement, and curiosity among both the students and the art teacher. Freedom of movement is designed into the size of the room as well, in consideration of the recommendations of the NAEA, but also through a reduction in the number of tables and other typical furnishings found in the classrooms included in this study. To clarify, in Figure 6.8, the table in front of the chalkboard and the one in front of the student work cubes, placed there by the SketchUp artist, should be replaced with one or two small individual tables or a few standing easels, which were a part of my original ideation of the arrangement of the work areas.

Figure 6.8. 3D Rendering 3.

A certain aspect of freedom is also built into the in-classroom materials storage, which is intended to serve as a student-friendly, fingertip accessible "store" from which students can easily access most basic art supplies while under the supervision of the art teacher. This design feature also offers students the opportunity to develop in the areas of personal responsibility, independence, and personal significance as they are taught to assist the teacher in caring for and maintaining the shared studio space.

Finally, the variable table sizes, chair options, outdoor studio, and library areas are designed to create a sense of choice that allows students to enjoy both shared community and individually situated spaces while they work, depending on which best supports their work on any given day. As I observed, both during this study, and when I was an art teacher earlier in my career, students come into the art studio in need of different options for seating some days. Depending on their mood or their concentration level, today a student might want or need to feel connected to the creative energy of their fellow students but, tomorrow, may need a little time separated from the group in a space that allows them to concentrate or sit quietly while they work. A few participant teachers were already making arrangements of this kind in their classrooms because they felt some students benefited from different levels of community engagement. The teacher at Site 16, whose room only had larger tables available, went so far as to provide two or three smaller tables from her own budget so that students who enjoy working alone could do so without hassle. Building those options into this particular floor plan is for the purpose of recognizing the variable needs that might be expressed in a group of 25 unique individuals that enter the art classroom during any one class period.

As I mentioned at the beginning of this section, the ideas and renderings included here are in no way an attempt to present what I believe the be the best or only way studio art classrooms should be designed and arranged. Instead, they should be viewed

as illustrative musings that are informed by the data from this study. They allow me to

visualize potential "answers" to some of the questions rolling around in my head after

spending 18 separate days observing the classrooms included in this study, and

countless hours reviewing the intricate details of how each drawer, closet, sink, table,

and so much more are facilitating learning for the teachers and students who inhabit

these spaces. In keeping with the "Goldsworthy as methodology" approach, they allow

me to gather the naturally strewn elements from the landscape of the art room and begin

to rearrange them into new structures and patterns as I try to understand them just a

little bit more each time.

Figure 6.9. 3D Rendering 4.

Figure 6.10. 3D Rendering 5.

Conclusion

Altering the Landscape

While attending the 2018 LearningScapes Conference in November, I was speaking with an architect who was asking me about my dissertation research. As we discussed the findings of the study and issues raised as a result of it, she stopped and asked me, "So, where do you think the paradigm shift needs to occur in order to enact change?" I was excited and a bit relieved to hear that our conversation had led her directly to that question, especially given that her field is uniquely positioned to craft some of the changes in design strategies that could positively influence children and their teachers' art classroom experiences for years to come. With all of the new school construction projects slated to take place in the next decade, if this one architect "got it" so quickly—and saw that a paradigm shift is a likely and apt consequence of what this study has revealed about the state of art classrooms—then the findings of this dissertation have already begun to alter the landscape.

The Goldsworthy Connection

With that in mind, it might be beneficial to view studio art classrooms through a different lens than those that have produced the standards of practice indicated through this research. The Goldsworthy lens allows us to imagine the very practical furnishings, fixtures, and equipment in the art room, along with its larger design features, as elements in the natural landscape of a studio classroom. It also permits us to consider the art room as a work of art itself, assigning sinks and cabinets and tables and chairs as stones and twigs and bracken and leaves, which, when re-imagined, painstakingly rearranged, and creatively combined into new patterns and new ways of seeing, might result in something much more spectacular than we ever thought possible.

Andy Goldsworthy is an environmental artist who will eventually alter the landscape in which he works, sometimes temporarily and sometimes more permanently. As he begins his work, he walks into a natural environment and ponders how the naturally strewn ecosystem might be rearranged and organized into a work of art that is responsive to the organic elements found in the space and one reflective of its inhabitants and history. He gathers the elements natural to the terrain in which he is working and begins to build. He often works for hours, sometimes days. In Rivers and Tides (Riedelsheimer, 2004), he is often observed with dirty hands, wet hair and clothing, and sometimes shivers as he digs through piles of stones, leaves, twigs, or ice, eventually gathering enough material to start his work. He pokes himself, sometimes bleeds a little, and sometimes his work falls apart multiple times, often right as he is reaching a breaking point of tiredness and frustration. But when that happens, he begins to build again. He intentionally arranges, constructs, and rearranges elements inherent to a specific place in order to produce a more deliberate outcome than what he found upon entering the space for the first time. This is not because he simply wants to bring order to the disorder of a decaying or unmanicured natural environment. Instead, he

speaks as one who is participating in a negotiated process, one that is iterative and sensitive to the environment in which he finds himself. He wants to build something reflective of and in response to the dynamics of the natural landscape, with respect to the people that inhabit the land and sensitive to its history. He speaks of a process in which even the small missteps he takes in the direction of his final work matters to the final work's success:

> This is the fourth time it's fallen, and each time, I got to know the stone a little bit more … and it got higher each time. So, it grew in proportion to my understanding of the stone. And that is really what … one of the things that my art is trying to do. It's trying to understand the stone.

His work, as I see it, is not unlike the work of the architect, art teacher, and other professional stakeholders when the studio art classroom becomes the ecological system whose landscape might be reshaped through a thoughtful and responsive rearranging of its features or "natural elements" in an attempt to create something aesthetically inspirational, and yet intuitively suitable to the activity that takes place there. If we want to consider new possibilities for arranging the natural landscape of the art room in ways that induce senses of delight, and joy, and awe, we need to get to know the place, its inhabitants, and its history. We need to ask ourselves questions: What is the landscape composed of? What is natural to this space? What is the *stuff* in it? How did it get this way? Where is it "going"? What do I need to understand better about the sinks, the cabinets, and the tables? These are, in colloquial terms, the questions this research has attempted to answer, at least in part.

Goldsworthy exhibits both patience and frustration as he works to create his sculptures. His work is not easy. Neither will be the work of utilizing our new and still imperfect understanding of current conditions in studio art classrooms to help us build art

classrooms that are as seemingly fluid and stunning as Goldsworthy's altered

landscapes.

The work may be difficult, but the rewards are promising. After carefully

constructing a sculpture from ice in *Rivers and Tides* (Riedelsheimer, 2004),

Goldsworthy discusses the striking, yet poetic tension between the difficult and

sometimes uncomfortable conditions under which the work gets done, the sometimes

surprising and delightful end results, and the ultimate goal of the work:

> It's hard, hard going … and it is cold sometimes on the hands, and I *do* get up very early … and *all* that effort is ultimately going into trying to make something that is, is *effortless*. What is extraordinary, that I *didn't* expect … that I could only have dreamt up happening … is that the sun coming from there shines *completely* on both sides of the icicle. So, all the icicle is illuminated against that, that cliff. And I never had any idea that *that* would happen. The potential—the potential here is fantastic!

Figure 6.11. Screenshot, *Rivers and Tides* (Riedelsheimer 2004), icicles.

And therein lies my own excitement. What "good things" might await art students

and their teachers if we undertake the challenging work of re-imagining how studio art

classrooms are designed and arranged? We can begin by using the data from this study

to initiate conversations across fields and specific insular interests, with the end goal of

collaboratively constructing creative spaces that may appear effortless to the end user,

but that have been carefully considered, worked and reworked, built and rebuilt, tested and modified, all while we leave room for those "happy accidents," those extraordinary, delightful discoveries along the way that we cannot yet imagine. My words are insufficient to capture the sense of hope and possibility that I see ahead, but like Goldsworthy, I believe that "the potential here is fantastic!"

Chapter VII

CONCLUSION

Learning and Doing

Finding the Holy Grail

Long before this dissertation research project began, I became intimately aware of the difficulties related to finding and re-imagining viable, much less "dedicated" spaces in which to teach art to children. I began my art teaching career by introducing weekly after-school art classes for a collective group of around ten 1st through 8th grade students in my 2nd grade general classroom, because the moderately sized private school that I worked for did not offer art to its students at that time. I wanted to share my own burgeoning love of art with those who were interested, because, until college, I had had only one memorable and, thankfully, inspiring art class during one semester of my 7th grade school year. I hosted a week of 'art camp' experiences at the same school for two summers for the same reason. That was the beginning of my learning to teach art in not-particularly-conducive spaces. Over the next fifteen years, I taught art in a pretty wide variety of settings—on picnic tables at a Girl Scout campground that was rented for the week so that low-income urban adolescents could enjoy a summer camp experience; in an art-on-a-cart situation on a first-floor elementary wing, with my art supplies stored in a

closet on the second floor—a closet for which I was not allowed to have a key and, thus, needed to ask the elementary secretary for it every time I wanted to retrieve supplies.

The first art room I inherited was housed in half of a small former cafeteria, with one storage room filled to the brim with paper towel tubes, empty milk jugs, mayonnaise jars, and enough plastic butter tubs to supply the entire city's art rooms with water bowls for the next few years, while the former-kitchen-turned-art-supply-storage-room still housed the 8th grade unfinished projects of the previous year's graduating class. In my next classroom, I taught in a roughly 200 square-foot classroom (with no sink and no materials to start with) under a principal who did not consider me a 'real teacher' at first because art was just one of the weekly "specials" that gave the elementary teachers an opportunity for a daily break; but after seeing me take my job as an art educator seriously, later recommended me for a promotion and facilitated a momentous professional development day for me at a regional Governor's School for the Arts in Virginia.

The last art classroom of my career before heading to Teachers College to pursue graduate work was nearly empty when I first moved in, because the school's summer facilities crew threw practically everything out as they were trying to prepare it for the new school year…and for me. It was explained to me that the room was in such a state of disarray that they did not feel that it was worth trying to make sense of the piles and piles of *stuff* that the former teacher had allowed to grow there over the four or five years that she had worked as the art teacher in the space. The only things that were "saved" from those piles were ten French Curves, five T-squares, a large stack of faded 18"x24" construction paper, and, quite literally, a handful of markers and crayons. During the first semester of that school year, as I was working to build a program and my students' love of art from practically nothing (but thankfully in a clean room that included a small storage closet and two working sinks), one of the students, who enjoyed calling

me "Miss Allmoond", told me that it would often take him nearly a whole class period to find a usable paintbrush in what had apparently been the notoriously out-of-control mess of an art room of the previous few years. He seemed a bit skeptical that things "might become otherwise" as he watched me work on purchasing materials and organizing them into what I hoped would be an inviting array of choices for my students. What he did not know, what he could not know is that I had finally found the holy grail, an art room that had some space and a sense of possibility—along with an administrator who listened to my ideas, and a very kind facilities director, both of whom worked with me over the next five years to equip the art room with a healthy supply of consumable materials, furnishings items such as custom-made sturdy shelving for both student project storage and a materials "store", and a kiln in a properly ventilated kiln room. As the room changed, my students' relationship with the space changed, and their enjoyment of artmaking, along with a willingness to embrace experiences with new materials, increased.

Where Practice Met Theory

The work of this dissertation is, in many ways, a direct result of all that I learned during that time. I saw what collaborative work on behalf of setting up an intentional environment in support of student learning and well-being looks like. I watched my students' faces when they chose materials and when they became fully engrossed in creating something that mattered to them, and I was left hopeful. I began to learn what "good things" look like in the expressions and actions of my students. This is where my hope in creating responsive learning environments began, and it is why I believe that collaboration across fields will result in actionable outcomes that will eventually amend,

or even alter, the assumptions, misperceptions, and misunderstandings about studio art classrooms and the teaching and learning that does and can occur there.

When I arrived at Teachers College to begin my Masters coursework, these memories were fresh and took root in my scholarly work, where they found connections to Nel Noddings, Maxine Greene, Parker Palmer, Jim Greenman, Yi-Fu Tuan, Andy Goldsworthy's process, Design Thinking strategies, and even the United Nation's early efforts in defining the rights of the child. Many other connections were made and the work of this dissertation began. About four years ago, it became clear to me that, before any other lines of inquiry about the art classroom as a built environment were to be considered, an examination of the lived experiences with the design and arrangement of existent studio art classrooms was necessary. Understanding the "essence" of the art room could not be established without direct observation and in-depth research that would produce working knowledge on which further research might be built.

Retracing the Study

This study utilized existing professional recommendations which became the basis for data collection and analysis in the observation of 18 studio art classrooms around the United States. In depth collection of data occurred through a checklist of the National Art Education Association's *Design Standards for School Art Facilities*, photographic documentation, and teacher interviews, in addition to supplemental data such as floor plans and historic documentation. One-day site visits were conducted, with data analysis beginning shortly thereafter.

The data from the study suggest that the original thesis was true; that the current state of these art rooms are not indicative of spaces that are designed to support visual art learning and human flourishing. Several scenarios were discussed that demonstrate

awkward or dysfunctional design elements in each of the 18 art classrooms included in the study, along with those scenarios that seem to hinder the ability of art students and their teachers to flourish in crowded, inhospitable spaces which often require the teachers who manage the space to create semi-workable solutions, labeled in this study as "make do" situations. The number of "make do" instances in each classroom further confirms the thesis that art classrooms are simply not understood by a wide variety of contributing voices, and thus, do not meet the needs of its inhabitants as well as we might have thought, and certainly, as we might hope they do.

Actionable Insight

I had been in enough classrooms before conducting this study to sense that the above results were a likely outcome, but without undertaking an in-depth, well-structured look at a wide range of classrooms in a large variety of schools and school types, a "sense" would never be able to produce the knowledge that a direct scholarly research project would. The findings and conclusions of the study will now be useful in apprising practitioners in the fields of education, school facilities planning, and product design, of the disruptions to art learning that occur simply as a result of poor design decisions. And because this research project investigated 117 specific features from 17 categories of the NAEA's *Design Standards*, while also producing three emergent categories, all of these specific data points have created actionable insights. Given that, it is my hope that this research will lead to an iterative design process that will help to alleviate stress on art teachers and their students in the future, especially so that their art learning experiences intersect with senses of well-being in delightful ways, in studio art classrooms where "good things" are a way of life, and where "making do" is a rare circumstance, if not a non-existent one.

Continuing to Find the Line

While there may be other studies that have looked in-depth at the studio art classroom, I am only aware of my own, that of Ann Marie Hubbard Waltz (2011) mentioned earlier, and one upcoming from the Art Education program at Teachers College, much more research is needed in order to see progress in its fullest potential. New questions raised from my research alone include a wide variety of topics

First, as I mentioned in Chapter IV when I described the apparent discomfort of kindergarten students who were attempting to draw while sitting in chairs too tall for their little bodies, it occurred to me that a study on the natural body placement tendencies of children who are making art might produce a better understanding of the types of seating options that students prefer while engaging with a variety of materials. During this study, I observed students in multiple positions including on the floors of their classrooms or in the adjoining hallways. I also observed a number of students who could not fit at the table or seating option provided. I wanted to know more about what I was seeing, but knew that it had to be a study for another time.

An obvious next level of research that I think would directly stem from this research would be to talk to students in their art classrooms to find out how they feel about the space and what improvements, if any, they would make if the option to do so were available. As Greenman (1988) encourages us to ask ourselves what our students' experience of a place is, so would I, especially given the constant accommodations that students and teachers make in the art room daily.

Other questions raised in the process of this research are, how are indicators of human flourishing observed in the art room, particularly in the context of spatial experiences; what influences exist that impact studio management in the art classroom, as discussed briefly in Chapter IV; how might new and traditional art making media coexist in the not-quite-achieved-21st-Century-learning-goals-classroom, like many of

those found in this study; and, finally, I believe that it would be extremely beneficial to the field of art educators if a much more comprehensive study were undertaken to better understand what exactly *is* the *stuff* of artmaking, how is it managed (stored, rotated, edited) and how is it procured?

A Cautionary Word from Parker Palmer

As I have mentioned earlier in this chapter, I am hopeful about the insight that this study offers. Although the data from Chapter IV paints a bleak picture, it seems to me that with definable problems now established, progress can be made toward resolving many of them. But it is likely that there will continue to be naysayers who cannot see a path toward art classrooms in which "making do" is no longer the norm. Thankfully, I am not alone in my hope, the realization that not all who read this will be equally hopeful, or the belief that persistence in fighting the "fire" discovered through this research will eventually reap benefits for art students and their teachers. Palmer discusses this truth at length below. His words ring true about any situation in which long-standing mindsets are confronted with new hope:

> No matter how hopeful our dialogue has been, no matter how many of our colleagues have embraced a new vision, no matter how many practical possibilities we have explored, someone will say, 'These are wonderful ideas, but every last one of them will be defeated by the conditions in my school.' That claim is followed by a litany of institutional impediments to reform: a president or a dean who understands business better than education; course loads so heavy or classes so large that quality cannot be maintained; an institutional reward system that claims to value teaching but promotes only professors who publish; the flow of scarce dollars away from teaching toward administration or research or bricks and mortar. When I sense the despair some faculty feel as they talk about these forces, it is hard not to share it. So I have been forced to ask myself whether the pessimists are right. If they are, integrity would require me to stop peddling false hope about the renewal of teaching and learning. Grant, for the moment, that institutions are so powerful and resistant as the pessimists say they are. The question then becomes, 'Has significant social change ever been achieved in the face of massive institutional opposition?' The answer seems clear: *only* in the face of such opposition has significant social change been

achieved. If institutions had a capacity for constant evolution, there would never have been a crisis demanding transformation, (2007, p. 170).

Three Final Reflections, Clarifications and Acknowledgements

'Making Do' versus Making Do

In the context of and in response to the specific lines of inquiry undertaken in this research project, the idea of 'making do' has become necessarily related to art teachers and students having to struggle with inhospitable conditions in their art studios. It is important to acknowledge at the conclusion of this study, however, that there is an entirely different and wholly beneficial style of making do that leads to "good things" happening in educational spaces, including studio art classrooms. In truth, creative processes are very much attached to connotations of making do, in which brilliant ideas are inspired and given a space in which they themselves might flourish. Both art teachers and their students should be encouraged to operate in this context of making do on a regular basis. One argument of this research has been that 'making do' as a result of inhospitable conditions tends to inhibit contexts in which constructive forms of making do might thrive, and inadvertently causes distractions and limitations to positive occurrences of making do in the art room. The hope is that if we decrease restrictive instances of 'making do' through understanding their related problems, we might as a result, increase circumstances that lead to creative and inventive instances of making do in the art classroom.

A Change in Perspective

When I started the dissertation process, it is not an understatement to admit now, upon the passage of time and seasons of reflection, that I carried some strong biases

and prejudices into the initial shaping of the research. These biases were acknowledged and carefully enumerated in Chapter 3, but at the end of this study, it is helpful to reflect on how my understanding, much like Goldsworthy's in his work, has grown with each "collapse" of many of the fixed ideas that I had when this work began. Also, like Goldsworthy's process, the overall research, data collection, analysis, and ultimately, the writing of this dissertation grew in proportion to my understanding. Over time, my own ideas broadened and became *more* inclined to be *less* critical of the divergencies of expectations set up by the NAEA's *Design Standards* and of the participant teachers' management styles and treatments of the peculiarities of design and arrangement complexities that were observed in their individual studio art classrooms.

Looking for the Humanness in Human Flourishing

In relation to addressing the practical needs of art students and teachers in their physical learning spaces, notions of human flourishing addressed in this study were intentionally set to examine 'real world' experiences such as student and teacher comfort, availability of things, achievable goals, and personal responsibility. Equally intentional were the aspects of human flourishing that are related to the *humanness* of flourishing, such as feelings of joy and happiness, delight and excitement, and an overall sense of well-being. This study did not primarily pursue pedagogical or theoretical concepts of human flourishing because these types of discussions are already present in the larger body of related scholarly work. It is rare that educators raise questions about student experiences of delight and joy, even in the context of art making—a "place" that seems quite suitable for "good things" to happen as a natural biproduct of working with colors and textures and new materials, et al. It is also rare for art educators to examine the practical effects and emotional affect of student inaccessibility to materials, uncomfortable work stations, distrust of their presence in the environment, among a

large variety of other unpleasant conditions. Thus, this study was designed to focus on

these practical aspects of flourishing in order to address an area seldom discussed in

the classroom or in academia.

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Appendix A

Data Collection Forms

Art Studio Classroom Information and Checklists

Participant #_____

Location of School (rural, suburban, urban):
_____

Private or Public:
_____

General Description of School:
_____

_____

Building Age:
_____

Classroom Age (if different from building age):
_____

Original Intended Purpose of Classroom:
_____

Notable Renovations:
_____

_____

Any Immediately Perceived 'Good Design' Features:
_____

_____

Any Immediately Perceived Problem Areas:
_____

_____

Grade Levels Served:
_____

Brief Description of Teacher's 'Story':
_____

_____

NAEA 2015 RECOMMENDATIONS FOR ART STUDIO CLASSROOMS

Teachers College, Columbia University
Program in Art and Art Education
525 West 120th Street
New York, New York, 10027
212.678.3000

School Code: _____   Date: _____

UNIVERSAL DESIGN		
Feature Recommendation	Presence of Feature (y/n)	Notes
Barrier free		
Accessible to all students		
Adaptive technology		
Aesthetic design		
Flexible arrangement		

SPACE		
Feature Recommendation	Presence of Feature (y/n)	Notes
Minimum 55 sq ft per student	Sq Ft:	
Student to teacher ratio 1:20 or 1:25		
Minimum 400 sq ft lockable storage room connected to the classroom	Sq Ft:	
Adequate in-class storage, accessible to students		

LOCATION OF ART ROOMS		
Feature Recommendation	Presence of Feature (y/n)	Notes
Entrance door larger than the usual classroom door		
First floor preferred to accommodate supply and equipment delivery and movement		
Access to outdoor spaces is ideal		
Easy access to restrooms and water fountains, esp for elementary students		
Close proximity to additional art rooms and other fine arts spaces is preferred		
Easy access to technology		
Centralized location to aid in cross curricular collaboration		

PATIO AND OUTDOOR SPACES		
Feature Recommendation	Presence of Feature (y/n)	Notes
Additional resource for instruction		
Accessible directly from the art room		
Natural light source		
Individual and group work is supported		
Access to water and electricity preferred		
Access door should meet fire code		

ART EDUCATOR'S OFFICE AND WORK STATION		
Feature Recommendation	Presence of Feature (y/n)	Notes
120 sq ft	Sq Ft:	
Enough room to house file cabinets, bookshelves, desk		
Large work surface other than the desk		
Space for storage of personal items		
Lockable		
Glass enclosed, visual access to classroom preferred		
Computer, wireless access, telephone, electrical outlets		
Close proximity to restroom		

BASIC FURNISHINGS		
Feature Recommendation	Presence of Feature (y/n)	Notes
Seating: Age, Media and Accessibility appropriate		
Tables: adjustable with large work surfaces		
Not suitable for traditional individual desks		
Moveable easels		
Drying racks		
Paper cutters, mat cutting station		
Ceramics carts, potter's wheels		
Light boxes		
Book cases		
Furniture on wheels preferred		

WALLS AND FLOORS		
Feature Recommendation	Presence of Feature (y/n)	Notes
Open wall space for display		

Color of walls: should consider illumination needs and aesthetic appeal		
Visual access to instructional technology		
Easy-to-maintain materials for floors		
Non-slip surfaces or mats		
Non-textured, non-carpeted floors		

STORAGE (CONSTRUCTION DETAILS)		
Feature Recommendation	Presence of Feature (y/n)	Notes
Adjustable shelving		
Sturdy/Durable shelving		
Size appropriate shelving for materials		
Flat and vertical storage options		
Lockable and vented storage for hazardous materials		
Lockable general storage		

STORAGE (TYPES)		
Feature Recommendation	Presence of Feature (y/n)	Notes
Materials storage arrangement: regular access vs. infrequent access—appropriately positioned for whichever applies		
Enough storage for materials and tools for a wide variety of media choices		
Flat, appropriately sized paper storage		
Adaptive aids for students with disabilities		
Enough storage for Works in Progress: 2D, 3D		
Adequate storage for student portfolios		
Appropriate storage for potentially hazardous materials		
Adequate storage of equipment, including light boxes, spotlights, mat and paper cutters, cameras, etc.		
Appropriate storage for teaching resources: prints, reproductions, books, instructional materials, still life objects, other reference material		
Storage for finished student artworks collected by the art educator		

PRESENTATION SPACE		
Feature Recommendation	Presence of Feature (y/n)	Notes
Generous, dedicated wall space within the art room		
Display areas such as cases and shelves for 3D artworks		
Allow for ease of display: ease of adherence and change-outs		
Spaces for 4-D and 5-D design projects ideal		
Well-lighted, moveable track lighting and/or spotlights		
Height of display spaces should be age-appropriate and accessible		

LIGHTING		
Feature Recommendation	Presence of Feature (y/n)	Notes
As much natural light as possible		
Color balance bulbs in spaces without access to natural light		
Adjustable lighting such as track and spot lighting for dramatic effects (shadows, reflected light)		
Dimming options for overhead lighting and track lighting preferred		
Control of window coverings		

ACOUSTICS		
Feature Recommendation	Presence of Feature (y/n)	Notes
Sound absorbing material for art room is preferred		
Ceiling level is sometimes a factor		

SINKS		
Feature Recommendation	Presence of Feature (y/n)	Notes
1 sink per 10 students		
Should fit the needs and age/height levels of students		
1 utility sink separate from hand washing sinks		
Heavy duty and multiple drains to ensure sinks drain quickly and completely		
Acid resistant		
Hot and cold running water		
Faucets enable clearance for filling a bucket or other large container		

Made of stainless steel or other materials that do not chip, crack or break		
Surrounded by waterproof work surface and counters, accommodating drainage		
Clay and/or plaster traps and filtration system installed to prevent clogging		
ADA accessible, multi-level sinks		
Located within the studio space		
Soap and paper towel holders installed nearby		

VENTILATION		
Feature Recommendation	Presence of Feature (y/n)	Notes
Sufficient to handle fumes, odors and dust generated by art activities		
General and local exhaust systems are needed		
Fire extinguisher available in the room		
Locked, ventilated, fireproof storage for hazardous materials		
Separation of some chemicals from others		
Specialized ventilation for kiln rooms and other toxic processes		

TECHNOLOGY		
Feature Recommendation	Presence of Feature (y/n)	Notes
Screen available		
Blackout shades		
Electrical and internet access for both students and teachers		
Appropriate placement of electrical outlets: floor and/or ceiling, walls and/or tables, including surge protection		
Battery back-up systems for multi-media preferred		
Consideration of possible new, rapidly changing technologies		
Adaptability of space to accommodate rapidly changing advancements in instructional and creative technologies		

SECURITY		
Feature Recommendation	Presence of Feature (y/n)	Notes
Securable material storage areas		

Securable work stations		
Securable art storage areas		
Securable display and presentation areas		
Securable storage of hazardous equipment and supplies		

SAFETY		
Feature Recommendation	Presence of Feature (y/n)	Notes
Meet local, state and federal safety regulations		
Meet fire codes		
Appropriate ventilation		
Fire extinguisher in room		
First aid kit in room		
Ordinary trash separated from hazardous waste*		
Proper hazardous materials disposal*		
One sink with emergency eye-wash station		
Multiple electrical outlets to avoid extension cords and tripping hazards		
Step ladder for art educator for accessing high up storage, etc.		
Knowledge and use of manufacturer's specific electrical and ventilation requirements for certain equipment		

* Many K-12 schools try to create non-toxic and hazardous-materials-free environments; thus eliminating the need for these features

PALMER'S PARADOXICAL TENSIONS		
Indicators: The Space Should	Description of observed behaviors and indicators	Notes
Be bounded and open		
Be hospitable and charged		
Invite the voice of the individual and the voice of the group		
Honor the "little" stories of the students and the "big" stories of the disciplines and tradition		
Support solitude and surround it with the resources of community		
Welcome both silence and speech		

INDICATORS OF "A PLACE WHERE GOOD THINGS HAPPEN"

SURPRISE, DELIGHT, JOY		
Indicators (Not exhaustive)	Description of observed behaviors and indicators	Notes
Deep thought		
Eagerness to…		
Surprise		
Delight		
Joy		
Genuine interest in learning		
Excitement, "electrical charge"		
Inspiration		
Passion for the subject		
Wonder		
Sense of untapped possibilities		

FLOURISHING AND WELLBEING		
Indicators (Not exhaustive)	Description of observed behaviors and indicators	Notes
Trust, security		
Familiarity		
Freedom of movement		
Civility		
Compassion		
Comfort		
Fundamental needs heeded and cared for		
Freedom from frustration due to want of materials		
Personal Responsibility		
Subject is at the center of the learning circle		
Direct access to the energy of learning and of life		
Purposeful work		
Sufficient materials available		
Irresistible materials		
Intimacy of place		
Meaningful collaboration		
Predictable and reliable room arrangement		
Consistent routines		
Success is achievable		
Students at height of development		
Students are in a state of activity and production		
Accommodation of disparate needs		

Appendix B

Human Flourishing Checklist Citations

SURPRISE, DELIGHT, JOY	
Indicators (Not exhaustive)	Source:
Deep thought	Noddings (2003b), p. 252
Eagerness to…	Noddings (2003b), p. 252
Surprise	Greene (2001, p. 204)
Delight	Noddings (2003b), p. 252, Greenman (1988, p. 28), Greene (2001, p. 204)
Joy	Noddings (2003b), p. 252, 260, Fisher (2001)
Genuine interest in learning	Jaquith & Hathaway (2012, p. 3), National Learning Infrastructure Initiative. (2004)
Excitement, "electrical charge"	Palmer (2007, p. 76)
Inspiration	
Passion for the subject	Palmer (2007, p. 122)
Wonder	Greenman (1988, p. 28), Greene (2001, p. 205)
Sense of untapped possibilities	Greene (2001, p. 202), Palmer (2007, p. 87)

FLOURISHING AND WELLBEING	
Indicators (Not exhaustive)	Source:
Trust, Security	Jaquith & Hathaway (2012, p. 61), Palmer (2007, p. 74)
Familiarity	Jaquith & Hathaway (2012, p. 62)
Freedom of movement and imagination	Tuan (2008, pp. 12 & 52), Jaquith & Hathaway (2012, p. 63), Greene (2001, p. 204), Palmer (2007, p. 87)
Civility	Palmer (2007, p. 82)
Compassion	Palmer (2007, p. 82)
Comfort	Cornell (2002, p. 37)
Fundamental needs heeded and cared for	Noddings (2003b, p. 260), Tuan (2008, p. 157), Greenman (1988, p. 34)
Freedom from frustration due to want of materials	Jaquith & Hathaway (2012, p. 61)
Personal Responsibility	Greenman (1988, p. 34), Jaquith & Hathaway (2012, p. 61)
Subject is at the center of the learning circle	Palmer (2007, pp. 105-106, 119)
Direct access to the energy of learning and of life	Palmer (2007, p. 122)
Purposeful work	Jaquith & Hathaway (2012, p. 60)
Sufficient materials available	Jaquith & Hathaway (2012, pp. 60-61)
Irresistible materials	Jaquith & Hathaway (2012, p. 62)
Intimacy of place	Tuan (2008, p. 157)
Meaningful collaboration	Noddings (2003b, p. 252), Graetz & Goliber (2002), Palmer (2007, p. 130)
Predictable and reliable room arrangement	Jaquith & Hathaway (2012, p. 60)
Consistent routines	Jaquith & Hathaway (2012, p. 60)
Success is achievable	Merriam-Webster Online Dictionary. Retrieved August 28, 2015
Students at height of development	Merriam-Webster Online Dictionary. Retrieved August 28, 2015
Students are in a state of activity and production	Merriam-Webster Online Dictionary. Retrieved August 28, 2015
Accommodation of disparate needs	Jaquith & Hathaway (2012, p. 3), Palmer (2007, p. 118)

Appendix C

Definition of Terms

Glossary of Terms:

These terms will be found throughout this study and will be employed within its context according to the following meanings:

Good Design: Good design, as described by the Commission for Architecture and the Built Environment in London, England, is found in an environment that supports human flourishing, that takes a variety of issues into consideration, not limited to the lowest priced option, that ultimately can be evaluated as able to stand the test of time, use and community need or interest. It is "not just about the aesthetic improvement of our environment, it is as much about improved quality of life, equality of opportunity, and economic growth," (2002). The term *well equipped* might also be used in reference to good design.

Bad Design: Bad design is considered by C.A.B.E. to be that which poorly meets the needs of those who ultimately inhabit the space. When things go wrong, such as an increase in criminal activity, feelings of despair becoming prevalent, loss of local community, loss of green spaces, senses of safety and well-being decreasing, loss of inspiration or intrinsic motivations, and lower morale overall, naming a number of possible outcomes, an overwhelming conclusion that a building or community has been badly designed is reached. C.A.B.E. describes a common consequence in which "badly designed places impose costs on their occupiers, their neighbours (sic), and on society, (2006). These terms might also be used in reference to bad design: *poor design, poorly designed, ill-equipped.*

'Making do', 'Making it work', 'Getting by': This is common vernacular in the field of art education, that typically refers to methods utilized by art teachers in which they use

the limited resources available to them, along with ingenuity and tenacity, for the purpose of meeting curricular goals with students in their classrooms, regardless of any shortcomings in provisions made for them by the school's physical environment, operating budget and any additional anticipated funding sources.

Dedicated Spaces, Dedicated Studio Art Space, Learning Environment, Learning Space, Classroom, Studio Art Classroom, Built Environment, Constructed Space, The Art Classroom: For the purposes of this study, each of these terms will be interchangeably used to refer to general art classrooms, primarily under the management of one art teacher, in which any level of K12 students might experience daily or weekly general art lessons.

Optimal Learning Environment: An optimal learning environment would be one in which students and teachers are engaged in learning in the most favorable conditions possible, notwithstanding the workings of a particular school culture, governing budgeting structure, and facility conditions and capacity, among other considerations.

'Stuff': As it relates to the art classroom, Ann Waltz (2011) describes this as a "catch-all term used to denote the movable objects within an art teacher's domain. It becomes the many without listing specifics," (p. 32).

Appendix D

NAEA Data Collection Spreadsheet

NAEA Data Collection Spreadsheet for Sites 1-18, p. 1

UNIVERSAL DESIGN, SPACE, LOCATION OF ART ROOMS, PATIO AND OUTDOOR SPACES, ART EDUCATOR'S OFFICE AND WORK STATION

UNIVERSAL DESIGN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Barrier free	P/U	N	Y/we	N/P	N/P	Y	N	U	Y/we	N	N	P	N	Y/N	N	Y	Y/we	Y
Accessible to all students	P/U	N.Ob	Y	N/P	Y/we	Y	N /we	Y/N	Y/we	N	N/we	Y/we	N	N/we	Y/N	Y	Y/we	Y/N
Adaptive technology	P/U	Y/P	Y/we	U	Y/we	Y/we	U	P	Y/we	Y	U	N/we	P	N/we	U	U	N	U
Aesthetic design	Y	Y	Y/we	Y/P	N	P	P	Y/N	N	N	Y/N	P	P	Y/we	N/we	Y	Y/we	Y
Flexible arrangement	P	Y/P	P	P	N/we	N	P	P	P	P	N/we	N/we	P	Y/N	N/we	Y	Y	Y/N
SPACE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Minimum 55 sq ft per student	594/660	421/825	1095/770	712/2255	767/1100	1140/1650	292/550	782/1925	984/1375	614/1375	~500/825	643*/825	667 OR 828/1650	1192/1760	756/1705	1373/1485	450/1320	1428/1485
Student to teacher ratio 1:20 or 1:25	1:12	1:15	1:14	1:29-1:41	1:15	1:25-30	1:10	1:35	1:25	1:25	1:12-15	1:15	1:30+	1:32	1:27 OR 31	1:25 OR 33	1:23-24	1:20-25
Minimum 400 sq ft lockable storage room connected to the classroom	100	~50	~600	~400	~300	~205	~50	396/192	167/180	0	~200	~300*	~272	~200	168	~200	~50	~464
Adequate in-class storage, accessible to students	Y/we	N/we	Y/we	P/N	N	Y	N (we)	Y/we	Y/N	Y/N	N/we	Y	Y/we	N/we	Y/N	Y	N	Y/we
LOCATION OF ART ROOMS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Entrance door larger than the usual classroom door	P	N	N	N	N	N	Y (we)	N	N	N	Y	N	P	N	N	N	N	N
First floor preferred to accommodate supply and equipment delivery and movement	N	N	N	Y	Y	Y	Y	N	N	N	Y	Y	Y/we	Y	N	N	Y	N
Access to outdoor spaces is ideal	N/we	N	N/we	N/we	N	N/we	N (we)	N	N/we	N	Y	Y	N	N	P	N	N	Y/N
Easy access to restrooms and water fountains, esp for elementary students	Y	Y	P	Y	P	Y	Y	N	Y	Y/N	Y	Y	Y/we	Y	U	Y	Y/we	Y
Close proximity to additional art rooms and other fine arts spaces is preferred	Y/we	N	N	N	N	Y	Y	N	Y	N	Y	Y/we	Y/N	N	N	Y	Y	Y
Easy access to technology	Y	Y/P	Y	P	P	Y/we	Y	Y/N	Y	Y/N	Y	Y/we	P	Y/we	Y/N	P	Y/we	Y
Centralized location to aid in cross curricular collaboration	N/we	N	N	P	N	Y	Y	N	N	N	Y/N	N	Y/N	P	N	Y/N	Y	N/we
PATIO AND OUTDOOR SPACES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Additional resource for instruction	N	N	P	N/we	N	N/we	P	N	Y	N	Y	Y	N	N	Y	N	N	Y
Accessible directly from the art room	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N	N	N	N	N
Natural light source	Y	N	Y	Y/we	N	Y	N	Y	N	Y	Y	Y	Y	Y	N/Y	Y	N	Y
Individual and group work is supported	NA	NA	U	NA	NA	N	N	NA	Y	NA	Y	Y	NA	N	N	NA	Y/we	Y/N
Access to water and electricity preferred	NA	NA	N	N	NA	N	NA	NA	NA	NA	Y/we	N	NA	NA	NA	NA	NA	N/we
Access door should meet fire code	U	NA	U	NA	NA	U	NA	NA	NA	NA	U	U	NA	NA	NA	NA	NA	Y
ART EDUCATOR'S OFFICE AND WORK STATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
120 sq ft	NOT SEPARATE	~45	NOT SEPARATE	NOT SEPARATE	NOT SEPARATE	N/we	NOT SEPARATE	NOT SEPARATE	336/8 TCHERS	~100	NOT SEPARATE	NOT SEPARATE	~112	NOT SEPARATE	NOT SEPARATE	NOT SEPARATE	NOT SEPARATE	N
Enough room to house file cabinets, bookshelves, desk	N	N	P	N	N/we	N	N	N	Y	Y	NA	NA	N	NA	NA	Y	NA	NA
Large work surface other than the desk	N	N	P	N	Y/we	N/we	N	NA	Y/we	N	NA	NA	Y	NA	NA	N	NA	NA
Space for storage of personal items	P	P	Y	P	Y	N/we	N (we)	NA	Y	Y	NA	NA	Y	NA	NA	Y	NA	NA
Lockable	Y	Y	Y	Y	Y	Y/we	Y	P	Y	Y	NA	NA	Y	NA	NA	Y	NA	NA
Glass enclosed, visual access to classroom preferred	NA	N	NA	NA	NA	N	NA	NA	N	N	NA	NA	N	NA	NA	N	NA	NA
Computer, wireless access, telephone, electrical outlets	Y	P	Y	Y	Y	Y	Y (we)	P	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Close proximity to restroom	Y	Y	Y/we	N	P	Y	Y	Y	Y	Y	Y	Y	Y	Y	U	Y	Y	Y

BASIC FURNISHINGS, WALLS AND FLOORS, STORAGE (CONSTRUCTION DETAILS), STORAGE (TYPES)

BASIC FURNISHINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Seating: Age, Media and Accessibility appropriate	Y	P	Y	P	P	Y	P	Y/we	Y/we	Y/N	Y	Y	Y	Y	Y/we	Y/N	Y/we	Y/N
Tables: adjustable with large work surfaces	P	P	P	P	P	Y/we	Y (we)	P	N	Y/N	Y/N	Y	N/we	N/we	N	P	N/we	Y/N
Not suitable for traditional individual desks	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	P	Y	Y/N
Moveable easels	N	N	N	Y/P	N	Y/we	Y (we)	Y/we	Y	Y	Y	Y	N/we	Y/we	N	Y	Y	N
Drying racks	2	1	1	1	1	4 sm	1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Paper cutters, mat cutting station	Y/P	N	Y	Y/we	Y/we	Y/we	Y (we)	P	Y	Y	Y/we	Y	Y	N	Y	Y	Y	Y
Ceramics carts, potter's wheels	N	N	Y	Y	Y	Y	N	N/we	N	N	N	P	Y/we	N	N	N	N/we	Y
Light boxes	N	1 sm	Y	N	N	Y/we	2 portable	Y	Y	N	U	Y	Y	N	Y	Y	Y	U
Book cases	N/we	N	Y	P	Y/we	Y	2	P	P	Y	Y	Y	Y/P	N	Y/we	N	Y/we	N
Furniture on wheels preferred	N	N	N	N	N	N	N	N/we	N	N	N	N	Y/we	N/we	N	N	N	N
WALLS AND FLOORS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Open wall space for display	Y/we	Y/we	Y/we	P	P	P	Y (we)	N	Y	Y/N	Y/we	Y	Y	Y	P	Y	Y	Y/N
Color of walls: should consider illumination needs and aesthetic appeal	Y	N	Y	N	N	Y	Y	Y	N	N	Y/we	U	U	U	N/we	Y/U	Y	Y/we
Visual access to instructional technology	Y	Y	Y	Y	P	Y	Y	Y/we	Y	Y/we	Y/we	Y	Y/we	Y	Y	Y	Y	Y
Easy-to-maintain materials for floors	Y	N	Y	Y	Y	P	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Non-slip surfaces or mats	N	N	N	Y/P	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N
Non-textured, non-carpeted floors	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y/we
STORAGE (CONSTRUCTION DETAILS)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Adjustable shelving	Y/we	N	N	N	N	N	Y	Y	N	N	N/we	Y/we	N/we	N	Y/N	Y	N/we	Y/N
Sturdy/Durable shelving	Y	N/we	Y	Y	Y	P	Y	Y	Y	Y/N	Y	Y	Y/we	Y	Y/we	P	Y	Y
Size appropriate shelving for materials	N/we	N/we	N	P	Y/we	N	N (we)	P	P	N	P	Y/we	P	N/we	N	P	N/we	Y/N
Flat and vertical storage options	Y	N/we	Y	P	P	P	N	Y/we	P	Y/N	Y	Y	Y	P	Y/N	Y	N	Y
Lockable and vented storage for hazardous materials	N	N	P	Y	P	Y	N (we)	Y	Y	NA	N	N	N	N	N	N	N	N
Lockable general storage	Y	N	Y	Y	Y	Y	Y	Y	P	N	N	N	Y/N	Y	N	Y/N	N/we	Y/we
STORAGE (TYPES)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Materials storage arrangement: regular access vs. infrequent access—appropriately positioned for whichever applies	Y	Y/we	P	P	N/P	P	Y	Y	Y/N	P	N/we	Y/N	Y/we	Y	N/we	P	N/we	Y
Enough storage for materials and tools for a wide variety of media choices	Y	N/we	Y	Y	Y	Y/we	N	Y/we	Y/we	N(we)	Y	Y	Y/we	N	Y/N	P	N	Y/we
Flat, appropriately sized paper storage	N/we	P	Y	Y/we	P	P	N	Y/we	Y/we	N	Y/N	Y/we	Y/we	P	N	P	N	Y/N
Adaptive aids for students with disabilities	P	N.Ob	U	U	P	U	U	P	U	P	U	N	N	N/we	U	U	U	U
Enough storage for Works in Progress: 2D, 3D	Y/we	N	P	P	Y/we	P	P	Y/we	N	N	Y/N	Y	N/we	N	N/we	P	N	Y/we
Adequate storage for student portfolios	N	Y/we	Y	Y/we	Y	N	N	Y/we	Y/N	Y	Y/N	Y	Y	Y/we	Y	Y	Y	Y
Appropriate storage for potentially hazardous materials	N	N	Y	Y	Y	Y	N	P	Y/we	NA	N	N	N	N	N	N	N	N
Adequate storage of equipment, including light boxes, spotlights, mat and paper cutters, cameras, etc.	Y/P	N	Y	Y/we	Y/we	P	N	P	Y/we	N	Y/N	Y	Y/we	P	Y/we	Y	N	Y
Appropriate storage for teaching resources: prints, reproductions, books, instructional materials, still life objects, other reference material	N	N	Y	Y/we	P	P	Y (we)	P	Y	N	Y/N	Y	Y	Y	Y/N	NA	N	Y
Storage for finished student artworks collected by the art educator	NN	Y/we	Y	NA	Y/P	P	Y (we)	P	N/we	N	Y/N	Y	Y/we	Y	Y/N	Y	Y/we	Y/N

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PRESENTATION SPACE, LIGHTING, ACOUSTICS, SINKS, VENTILATION

PRESENTATION SPACE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Generous, dedicated wall space within the art room	Y/we	N	P	P	P	N/we	P	N	Y/we	Y/N	Y/we	Y	Y/N	Y/we	P	Y	Y/we	Y
Display areas such as cases and shelves for 3D artworks	Y/P	N	U	Y	U	N	Y/P	Y	Y	N	Y	Y	Y/we	N	Y	Y/N	N	Y
Allow for ease of display: ease of adherence and change-outs	N	N	U	N.Ob	U	N/we	N	Y	Y	N	Y	Y	Y/we	Y/we	Y/N	Y	P	Y
Spaces for 4-D and 5-D design projects ideal	N	N	N	N	N	N	N	N	N	N	U	N	N/U	N	N	Y/N	N	N/we
Well-lighted, moveable track lighting and/or spotlights	N/we	N	N/we	N	N	N	N	N	N	N	U	N/we	N	N	N	N	N	Y
Height of display spaces should be age-appropriate and accessible	U	NA	Y	Y/P	U	Y	P	N/we	Y	N	Y	Y	Y	Y	Y	P	Y	Y

LIGHTING	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
As much natural light as possible	Y	N	Y	Y/we	N	P	N	Y	N	Y/N	Y/we	Y	P	Y/we	Y	Y	N	Y
Color balance bulbs in spaces without access to natural light	N	N	N/U	N	N	N	N	U	N	U	U	U	U/N	U	N	U	Y	U/Y
Adjustable lighting such as track and spot lighting for dramatic effects (shadows, reflected light)	N/we	N	N/we	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N
Dimming options for overhead lighting and track lighting preferred	N	N	N	N	N	Y	N	N/we	N	N	P	N	N	N	N	N	N	N
Control of window coverings	Y	NA	Y	Y	NA	Y	Y (we)	Y	NA	Y	Y	Y	P	Y	Y	Y	NA	U

ACOUSTICS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Sound absorbing material for art room is preferred	U	N.Ob	U	U	U	Y	N	U	N	N	N	N	N	U	N	Y	N	N
Ceiling level is sometimes a factor	U	Y	U	Y	U	U	U	U	U	U	U	N	U	U	U	U	P	Y

SINKS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 sink per 10 students	4:12	0:15	3:14	1:29-41	1:15-17	2:25-30	3:10	2:35(we)	3:25	0:25	Y	4:30	2:30	2:32	~1:30	2:25	1:24	Y/N
Should fit the needs and age/height levels of students	Y/P	NA	Y	Y	Y	Y	P	P	Y	N	Y	Y	Y	Y/N	P	Y	P	Y/N
1 utility sink separate from hand washing sinks	N	NA	Y	N	N	Y/we	N	N	N	N	N	N	N	N/we	N	Y	N	N
Heavy duty and multiple drains to ensure sinks drain quickly and completely	N	NA	Y	N	N	N	N	N	Y	N	Y	Y	Y/N	N/we	Y/N	N	N	Y/N
Acid resistant	Y	NA	Y	P	Y	Y	Y	Y	Y	NA	Y	Y	Y	Y	Y	Y	U	Y
Hot and cold running water	Y/P	NA	Y	Y	Y	Y/we	Y	P	N	U	Y	U	Y	Y	N	P	Y	Y
Faucets enable clearance for filling a bucket or other large container	Y/P	NA	Y	P	Y	Y	P	N	N	Y	Y	N	Y/we	Y/we	Y/we	Y	Y	Y
Made of stainless steel or other materials that do not chip, crack or break	Y	NA	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Surrounded by waterproof work surface and counters, accommodating drainage	Y	NA	Y	N	N	N	Y	N	Y	Y/we	N/P	Y/we	Y	Y/we	Y	Y/we	Y	N
Clay and/or plaster traps and filtration system installed to prevent clogging	N/U	NA	Y	Y	N	Y	N	Y	Y/we	N	U	U	Y	Y/we	N	N	N	Y
ADA accessible, multi-level sinks	N	NA	Y/we	N	Y	Y	N	N	Y/we	N	Y/we	N	N	N	N	Y	N	U
Located within the studio space	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y
Soap and paper towel holders installed nearby	Y/P	N/we	Y	Y	P	Y/we	Y (we)	P	Y	Y/N	Y	Y/we	Y	N	Y	Y	N	Y

VENTILATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Sufficient to handle fumes, odors and dust generated by art activities	N	N	Y	N	N	P	N	P	P	Y	Y	P/U	N/we	Y/we	U	Y(we)	N	Y
General and local exhaust systems are needed	GEN ONLY	GEN ONLY	Y	GEN ONLY	P	P	GEN ONLY	Y	N	N	Y	GEN ONLY	Y	GEN ONLY	GEN ONLY	N	GEN ONLY	Y
Fire extinguisher available in the room	N	N	Y	N	Y	N	N	Y	Y	N	Y/we	Y	Y	N	N	N	N	Y
Locked, ventilated, fireproof storage for hazardous materials	N	N	Y	Y	Y	Y	N	N	Y/we	NA	N	N	N	N	N	NA	N	N
Separation of some chemicals from others	N	N	U	P	U	U	N (we)	N/we	N	NA	N	N/we	N	N	N	N	N	NA
Specialized ventilation for kiln rooms and other toxic processes	Y	NA	Y	P	Y	Y	NA	Y	Y	NA	Y	U	Y	Y	U	N(we)	N	Y

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TECHNOLOGY, SECURITY, SAFETY

TECHNOLOGY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Screen available	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y/we	Y	N/Y	Y
Blackout shades	N	NA	N	N	NA	N	N	N/we	NA	U	Y	N	N	N	N	N	NA	U
Electrical and internet access for both students and teachers	TEACHER ONLY	TEACHER ONLY	Y	TEACHER ONLY	TEACHER ONLY	Y	P	Y/we	Y	TEACHER ONLY	Y	N	Y/we	Y/N	N/we	P	N	Y/N
Appropriate placement of electrical outlets: floor and/or ceiling, walls and/or tables, including surge protection	Y	N	Y/we	P	P/we	Y/we	Y (we)	N	N/we	P	P	Y/we	P	P	Y/N	P	P	Y
Battery back-up systems for multi-media preferred	N	U/N	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Consideration of possible new, rapidly changing technologies	N	N	Y	N	N	Y/we	Y (we)	P	P	N(we)	Y	Y/N	N/we	N/we	N/U	U	P/U	Y/we
Adaptability of space to accommodate rapidly changing advancements in instructional and creative technologies	N	N	Y/we	N	N	U	U	N/we	N	N	Y/N	N/we	P	N	N	U	N	P
SECURITY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Securable material storage areas	N/P	Y/we	Y	Y	Y	Y	Y (we)	P	Y	Y/N	N	N	Y	Y	N	P	N/we	Y/we
Securable work stations	N	N	N	N	N	N/we	N	N	N	N	N	N	N	N	N	Y	N	N
Securable art storage areas	Y	Y/we	Y	P	Y	Y/we	Y (we)	Y/we	Y	N	N	N	P	Y/we	N	P	N/we	Y
Securable display and presentation areas	Y/P	N	P	P	U	N	N (we)	P	P	N	N	N	P	U	N	P	N	P
Securable storage of hazardous equipment and supplies	N	N	Y	Y	Y	Y	N (we)	Y	Y	NA	N	N	N	Y	N	N	Y	N
SAFETY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Meet local, state and federal safety regulations	U	U	U	U	U	U	U	U	U	U	P	U	U	U	U	U	U	Y/U
Meet fire codes	Y	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	Y/U
Appropriate ventilation	P	P	P	P	P	Y/we	P	P	N	U	Y/we	U	U	U	N	P	N	Y
Fire extinguisher in room	N	N	Y	N	Y	N	N	Y	Y	N	Y	Y	Y	N	Y/N	N	N	Y
First aid kit in room	Y	N	P	N	P	P	N (we)	P	N	N(we)	Y/P	N	N	N	N/we	U	Y	N
Ordinary trash separated from hazardous waste*	N	N	Y	N	N	N	N	N	U	NA	N	N	N	N	N	NA	N	N
Proper hazardous materials disposal*	N	N	N	N	U	N	N	N	Y	NA	U	N/we	N	N	N	N	NA	U
One sink with emergency eye-wash station	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	NA	N	N
Multiple electrical outlets to avoid extension cords and tripping hazards	Y	P	Y	N/P	P	Y	Y (we)	N	Y/we	P	U	N/we	P	U	Y	P	P	Y
Step ladder for art educator for accessing high up storage, etc.	Y	Y	Y	N	Y	N	Y	Y	U	N	U	Y	N	Y	Y	Y*	N	Y
Knowledge and use of manufacturer's specific electrical and ventilation requirements for certain equipment	Y	Y	P/U	U	U	Y/we	U	U	Y	NA	U	P	Y/we	U	U	U	U	U

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FIRST LEVEL OF CODING

Area not readily or obviously addressed in art classrooms as observed during occupancy. May have been addressed in original design of studio space, but art educator and room usage do not lend toward definitive data.														
Stands out as subjective data, but also a highly problematic area with 'multiple points of entry' to be discussed and placed under consideration														
Area is consistently lacking across a variety of school settings														
Area is consistently addressed across a variety of school settings														

Y= Yes
N= No
P= Partially meets recommendations
U= Uncertain that area meets recommendations
Y (we)= Yes (with minor exceptions)
N (we)= No (with minor exceptions)