

APPLIED DESIGN: AN EXPLORATION OF ARTS INTEGRATION THROUGH  
THEATRICAL DESIGN IN THE FOURTH GRADE CLASSROOM

by

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## **ABSTRACT**

The purpose of this action-research study is to explore a new pedagogical tool for myself as a teaching artist: Applied Design. My ideas around Applied Design are rooted in the field of Creative Drama, and grew out of a desire to explore theatrical design in the same process-centered way that Creative Drama explores informal and improvisational drama techniques. To this end, I attempt to determine how the use of Applied Design affects both student engagement and student understanding when applied as an interdisciplinary tool to Language Arts curriculum. For the purposes of this study, I introduced Applied Design as a discovery teaching methodology through a one-week Language Arts unit in a local fourth grade classroom. I collected data from the students, their classroom teacher and myself through questionnaires, written work and personal observation.

As I examined the data, I discovered positive relationships between Applied Design and both student engagement and student understanding. Students responded to the discovery teaching methods enthusiastically, and embraced each design project with a dedication that appeared to inspire students to push through difficult moments in effort to complete each given task. Although the length of the study and amount of data generated limited my ability to draw widespread conclusions, the evidence suggests that further study in the applications of Applied Design is merited. This study also begins to discuss what such future study might look like, in effort to push the exploration of Applied Design forward. Ultimately, this action research study reinforced my conviction that process-centered theatrical design can serve as a useful tool for myself as a teaching artist, and inspired me to move forward in my understanding and exploration of its applications.

To Colin Chapman Peterson, who walks shoulder-to-shoulder with me every step of the way.

Lobster.

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## CHAPTER ONE: INTRODUCTION

In this study, I seek to explore the application of theatrical design techniques as a pedagogical tool for myself as a teaching artist. I am particularly interested in the use of these techniques (hereafter referred to as Applied Design) as a methodology for teaching core curriculum (such as Language Arts, Math, Science, and Social Studies). In this specific study, I attempt to determine the effects of applying Applied Design techniques to fourth grade Language Arts curriculum, by exploring the effects of this teaching technique on student engagement and student understanding.

### Constructing Applied Design

My own notions of Applied Design come from my understanding of and work in Creative Drama, specifically uses of drama across other curricular areas. As a graduate student, I experienced first-hand the rich possibilities that opened up for students when educators applied acting and directing processes in interdisciplinary ways. Several opportunities allowed me to work in local classrooms as a teaching artist. In these projects, I worked in partnership with classroom teachers to integrate drama into their core class curriculum. As I employed Creative Drama methodologies as a teaching artist, I began to wonder why theatre-arts educators did not also seem to be applying design processes employed in theatre. At least, I never found documentation of such, whereas uses of drama across the curriculum were recorded extensively in books and articles. Throughout my experiences and research as a graduate student, I found evidence only of peripheral uses of theatrical design in Creative Drama, and the emphasis was never on the design process itself. For example, an exercise or activity might involve the



addition of a simple prop, costume or set piece—but there was no weight given to the creation or even selection of that particular piece and what made it a strong design choice. In Creative Drama, design seemed either absent or an afterthought.

My guidelines for developing Applied Design strategies grew from the definition of Creative Drama adopted by the American Alliance for Theatre and Education:

An improvisational, non-exhibitional, process-centered form of drama in which participants are guided by a leader to imagine, enact, and reflect upon human experiences. The creative process is dynamic. The leader guides the group to explore, develop, express, and communicate ideas, concepts, and feelings through dramatic enactment. In creative drama, the group improvises action and dialogue appropriate to the content it is exploring, using elements of drama to give form and meaning to experience (Alrutz 1).

As explained in the Handout, the first line of this definition puts forth the idea that “Creative drama is not intended as a performance to entertain an audience. Creative drama is not the school play” (Alrutz 1). In the world of creative drama, a classroom replaces the stage, and students the actors. Participants might share their work with their peers, but the emphasis steers away from a final product. Instead, the focus is placed on the process of creation and what is gained through the experience of creating.

While Creative Drama primarily uses the tools of an actor (such as employing voice and movement to express thoughts and ideas, or stepping into role as a character other than oneself, for example), I began to explore how Applied Design might employ the tools of a designer to much the same end. According to the definition above, Creative Drama has the power to guide

students to “explore, develop, express, and communicate ideas, concepts, and feelings” (Alrutz 1). Through my work as a teaching artist, I came to believe that the structures of the design process held this same potential—an ability to push students to think and to interact with their curricular subject matter in an active, thorough, and exciting manner (plus, it was fun!).

Following the inspiration of Creative Drama, in Applied Design, students working in Applied Design settings would not be designing the costumes, sets, or lights for a specific production. Rather, the processes designers use to create the visual world of a play would be applied to sources of inspiration other than a script. Just as Creative Drama strives “to give form and meaning to experience,” I sought the use of design elements and principles to guide students to make sense of the material presented in their classrooms and to enrich the learning experiences by empowering students to participate in constructing understanding for themselves (Alrutz 1). However, though I believed theatrical design could be applied in this way, I also wanted students to learn something about theatre itself, even if theatre was primarily serving as a method for teaching another content area. This is not necessarily a goal of Creative Drama—often, theatre processes are used merely as a tool, with no apparent value ascribed to exploring aspects of theatre as an art form in its own right. However, in my work I hoped to show that theatre could be used as a tool and also be explored as an art form in the same space.

I began using elements of process-centered design in my lessons two years prior to constructing this study. These techniques would later grow into my more developed concept for Applied Design. In fact, the development of this study marked my first formal examination of Applied Design, as I explored the potential of this tool as an addition to my teaching-artist bag of tricks.

## Study Design and Methodology

In addition to being my first formal examination of Applied Design, this was also my first experience creating a research study to explore an aspect of my (or anyone else's, for that matter) teaching methodology. To guide my study design, I turned to the description of action research presented by Louis Cohen, Lawrence Manion and Keith Morrison in their book Research Methods in Education. The guidelines set forth by these authors inspired me, because they presented a notion of research that empowered me as both a participant and researcher. Since I considered myself a neophyte researcher, the philosophy behind action research also appealed to me in its seeming accessibility.

According to Cohen, Manion and Morrison, "action research lays claim to the professional development of teachers... It is 'situated learning'; learning *in* the workplace and **about** the workplace" (228). I was drawn to this notion that "action research is an approach to *improving education by changing* it and learning from the consequences of those changes... It is research through which people work towards the improvement of *their own practices* (and only secondarily on other people's practices)" (Cohen et al 229). This seemed fitting: Applied Design was a relatively new teaching methodology to me, and it felt appropriate to select a research approach centered on discovery within my own process, and one that made no claims about the processes of other educators.

My goal was to explore the potential of Applied Design as a productive and dynamic teaching tool for myself as a teaching artist. To do this, I knew that I wanted to apply Applied Design as a discovery teaching method, and because most of my previous experience in Applied Design related to language arts, it felt like a natural extension of this work to conduct my initial

study in that subject area. To guide this research, I focused on two specific areas of student learning, and developed two questions to direct my inquiry:

- How does Applied Design affect levels of student engagement in the classroom, when employed as a teaching tool to address core curriculum?
- When used as such a tool, how does Applied Design affect student understanding of this core curriculum?

To help narrow the focus of these broader questions, I began seeking a classroom in which to conduct my research.

The previous spring, I conducted a few classroom and professional development workshops at a local elementary school. Knowing that the school's administration was supportive of arts integration, I contacted this school's arts coordinator. She sent introductory information about my project goals to the fourth and fifth grade teachers, and Mrs. Z, who taught fourth grade, responded. My initial meeting with Mrs. Z proved positive, and she was excited about the possibility of new hands-on ideas for her own classroom work. She had recently seen her students become motivated by a reader's theatre project, and hoped that this project would create a similar positive energy in the classroom.

As we discussed the length of the project, Mrs. Z explained that their language arts text broke down into week-long lessons, which were part of larger units. I hoped to apply the discovery teaching methodology to several of these lessons, but due to the intense and specific demands of her teaching schedule, Mrs. Z felt comfortable experimenting with this process for only one week. We discussed the possibility of adding a few lessons prior to this week, to

introduce the design processes that would be applied to that week's language arts lesson. With this rough plan in action, we moved toward selecting a specific lesson for me to plan around. Mrs. Z's calendar provided one clear possibility: we had to incorporate Applied Design to the lesson on "Benjamin Banneker: Pioneering Scientist."

Mrs. Z dedicated about two hours each day to Reading Block, and it was during this time that I would apply my discovery teaching methodology. During the week of the study, Mrs. Z planned to use the first half of that block to introduce the major concepts of the day's language arts lesson, and then I would be given 45 minutes to an hour to apply Applied Design to those concepts. In this way, the Applied Design discovery lessons would be created to supplement, rather than replace, Mrs. Z's whole-group instruction. She gave me a copy of the teacher's edition of the language arts text, which broke down the week-long lesson into clear objectives for each day.

Concurrent to this planning with Mrs. Z, I worked with the Institutional Review Board of the University of Central Florida to ensure that my study fit the protocol for research with human subjects. I created informed consent forms for both students and parents, informing all involved about the nature of my research. I received approval for all Mrs. Z's students to participate in the study. My original intention was to film each class session for later review and reflection, especially given that I would be serving as lead instructor during the discovery lessons. However, a significant number of parents declined to allow their children to be videotaped, and so I abandoned videotaping as a method of data collection. In addition, I had hoped to use teacher and student interviews as another method of data collection; however, Mrs. Z's classroom schedule precluded the possibility of making time for these post-study discussions.

I collected Mrs. Z's thoughts on the discovery lessons and on her classroom community as a whole through one pre-study questionnaire and two post-study questionnaires. I gathered student responses through both pre- and post- study questionnaires (see Appendices). For each of these questionnaires, I sought to create open-ended questions and complete-the-sentence items that led the responder as little as possible. The questionnaires were designed to gather student and teacher impressions about reading block prior to the study and after the discovery lessons took place. In addition to the questionnaires, I also collected data from written student work during the discovery lessons and kept a journal of my own observations and reflections throughout the process.

Following the discovery teaching methodology, I examined each of these data sources in relation to my guiding research questions. I surveyed this data with an eye toward my guiding research questions, looking specifically for details related to student engagement or student understanding. My process as a whole followed that laid out by Cohen, Manion and Morrison: plan, act, observe and reflect (236). In the following chapters, I present the development of the discovery lessons (planning, action and observation), as well as the results of this examination (reflection).

## **CHAPTER TWO: LESSON DEVELOPMENT AND EXECUTION**

Developing the discovery lesson plans required a great deal of flexibility, both prior to each lesson and during their execution. Mrs. Z gave me descriptions of her own lessons for each day of the study. These detailed what she planned to cover with her students before my time began. However, on some days the class did not reach her intended goals. In addition, Mrs. Z's instruction sometimes ran long, reducing the 45 minute segment assigned to Applied Design. This meant that I had to stay on my toes, constantly re-assessing my plan for the day and the ways the discovery methods might be best used to supplement Mrs. Z's instruction.

As we approached the start of the study, Mrs. Z expressed concern about devoting any classroom time to activities or exercises not directly related to the goals of her reading block for that day. For example, as I discussed potential warm-up exercises that might help to prep students for a given design activity, she explained that she did not feel justified in spending class time on this, as the exercises were thematically tied to theatre, not language arts. Thus, I was unable to conduct any introductory lessons on theatrical design or the design process. Instead, I incorporated these concepts (albeit in a briefer form) into each day's lesson, as I believed such instruction was an integral part of student success in the design activities themselves.

### Day 1: Vocabulary Masks

In Mrs. Z's language arts textbook, the first lesson of each new unit introduced new vocabulary from the week's reading. Thus, the first discovery lesson focused on exploring these words, and served as an opportunity to introduce design vocabulary as well. I opened the lesson with several full-group brainstorming sessions. We began with a broader view, exploring the questions,

“What is design?” and “What is theatrical design?” This started the students thinking first about creating something to fit a particular need or purpose, and then to consider the difference between generating something for our everyday life (fashion, for example), and something for the stage (a costume). At this point in the discussion, I introduced two of the elements of design used by theatrical designers: color and texture. After making sure each student understood the definition of these words, we brainstormed together emotions and experiences that reminded us of specific colors or textures, and vice versa.

Following this dialogue, I separated the students into groups. Each student was given a Vocabulary Mask Design Worksheet and each group was also given a box containing the tools they would need that day. I explained that each box contained a blank mask. As a group, they would design the embellishments for that mask, so that the finished product represented a given vocabulary word. First, they would use the provided worksheets to guide their discussion and design choices, which would be specifically related to color and texture. Then, they could use the materials in the box (colored paper, colored pencils, markers, aluminum foil, saran wrap, bubble wrap, scotch and masking tape, and glue sticks) to execute their design.

At this point, I gave each group a post-it note with their assigned word. Groups had about twenty minutes to discuss their word, plan their design, and complete their masks. Mrs. Z and I moved amongst the groups, asking questions and helping to guide student progress. Following their work time, each group presented their mask, explaining the colors and textures chosen and justifying those choices. Due to time constraints (this discovery lesson began about five minutes late), we were unable to move through the quick reflection activity I had planned to



guide students to think about the experiences of the discovery lesson in a broader way (see Chapter Five for a discussion on how time constraints affected outcomes of this study).

### Days 2 and 3: Scenic Model Storyboard

In the reading block time leading up to the second discovery lesson, Mrs. Z introduced the non-fiction story of “Benjamin Banneker: Pioneering Scientist.” For their first read, Mrs. Z played the text for them on an audiotape, while students followed along in their books. According to the overall schedule for the week, students should have read the whole story. However, Mrs. Z was only able to take students through the first half of the story. Thus, I immediately adapted the discovery lesson to fit across two class sessions, rather than the single session it was intended for (this also meant eliminating the costume design activities originally planned for the third day of the study).

The second discovery lesson, like the first, began with a full-group discussion. On the board, I mapped out three distinct areas of theatre: directing, design and acting. We briefly discussed each of these, commenting specifically on how they related to and interacted with each other to help create one product. Then, I asked students to brainstorm in partners, thinking about all the different areas of design they could list for a theatrical production. As students shared the results of their partnered discussions, we turned our focus to the scenic designer, and talked about their role in examining and representing the world of the play.

I explained to students that just as the scenic designer of a play investigates their script, they would be investigating their story for the week. As a class, we broke the first half of their text into four chunks and summarized each. Next, we returned to the idea of scenic design, and

discussed the differences between realistic and more abstract sets. Using visual examples, students identified ways that designers had used their scenery to highlight overall themes, ideas, or symbols. I then explained that, in groups, students would design scenery that would help remind us all of the important ideas in their story. Each group would create a scenic model to represent one section of the text.

I showed them the shoebox “stages” they would use (created by removing one “wall” of the box, standing up the lid against the back wall, and attaching it to create a taller backdrop). I then elaborated on the supplies they would be working with. Today, their tool kits included scotch and masking tape, glue sticks, colored pencils, markers, and several pairs of scissors. A buffet of colored paper was also laid out in the back of the classroom.

Students were assigned to one of four groups and given one of the sections of the story we had previously summarized together. I gave groups about ten minutes to discuss this section and begin thinking about their scenic designs. Guided by their Scenic Design Worksheets, students reflected on their section of the story and pulled three important ideas from their section, following an established classroom practice for seeking the “main ideas” of a passage. Then, each group brainstormed what scenic elements might best represent these points. Following this planning time, groups were given about fifteen minutes to create these elements within their shoebox stages. This timeframe proved challenging for the students, and knowing that we would continue to work with scenic design the next day, I allowed students to continue working into the time I had originally intended for review and reflection, only leaving time for each group to briefly present their model.

The next day, the third discovery lesson continued where we had previously left off, although eight students were pulled from our session for their Gifted class. During the earlier reading block time, Mrs. Z and the remaining class finished reading the story. To achieve this, as well as her other goals for that time, her portion of the reading block ran over by about ten minutes that day. This left about thirty-five minutes to complete our Scenic Model Storyboard.

We began with a review of the accomplishments of the previous day. I distributed Scenic Model Worksheets, which displayed a picture of each of the four models created during the second discovery lesson in random order. I asked students to examine the details of each model, which were also on display at the front of the room. Then, I directed them to place them in the correct sequence, so that they represented the chronological progression of the story. Once they were finished, discussing the sequencing process provided a forum for analyzing the previous day's work. This served two purposes: it reinforced their comprehension of the first half of the story while also strengthening their understanding of the design process introduced.

I also pointed out that a human figure had been added to each model. We discussed the possibilities each scenic design provided for movement, and I asked them to consider the movement of actors when they worked on designs later that day. Following this discussion, students were assigned to one of three groups and to a section of the story. In groups, students followed the process from the second discovery lesson, beginning with summarizing their pages of the story and ending with a finished scenic model. With the experience of the previous day, groups were able to plan and execute more efficiently, allowing time for each group to fully present their model. Mrs. Z, the other students, and I asked questions during these presentations, and finally, we looked at the full storyboard created by the class' seven models.

### Days 4 and 5: Mood Lighting

The time dedicated to the fourth discovery lesson was reduced dramatically by an FCAT (Florida Comprehensive Assessment Test) practice test. This practice test bled over into reading block time, but did not replace Mrs. Z's planned instruction for the day. Her lesson on descriptive language, then, took up more than half the time (about twenty five minutes) originally intended for the day's Applied Design extension. However, by this point of the week, Mrs. Z had begun to see the potential of Applied Design, and seemed to want to become a bigger part of that instruction—to “try it on” for herself. Thus, she also spent part of her time talking to the class about light in the world around us, and what moods it helps set in different situations. She became incredibly excited about student responses in this discussion, and this helped to establish some of the key ideas for the day's discovery lesson. Although her lecture posed a challenge in terms of reduced time for the discovery lesson, it excited me greatly. I was gratified to see her become personally involved in Applied Design. This involvement made me hopeful about the potential partnership between classroom teacher and teaching artist in future projects.

Knowing that twenty minutes would not provide sufficient time for the planned lesson, I again stretched a one-day plan across two sessions. This also meant our culminating lesson would not provide the review and overall wrap-up I had hoped for. During that fourth discovery lesson, I bridged Mrs. Z's discussion of light into the theatre, discussing the role of a lighting designer in helping to establish the mood of a particular moment onstage. Students then dedicated our remaining time together to exploring a given passage from their story, and experimenting with the lighting design tools provided in their kit: gels, gobos, and flashlights.

During the fifth discovery lesson, we picked up where the previous day ended. Students revisited their given passages, and I directed them to design lighting for the scenic model that matched that passage. Focusing specifically on color and texture, students worked to convey the mood pinpointed in the previous day's examination of the text. During the second half of this session, groups presented their designs, explaining their choices and answering questions posed by Mrs. Z and me. Although I returned the following week to conduct Post-Study Questionnaires, these presentations marked the culmination of the discovery lesson plans.

## CHAPTER THREE: STUDENT UNDERSTANDING

In the earliest stages of planning this study, I recognized the importance of student understanding. To serve as a useful teaching tool, Applied Design would have to help students understand two things: concepts of theatrical design and the core content being taught through those concepts. In looking for a model to explore student understanding, I turned to “Authentic Pedagogy: Standards That Boost Student Performance,” an article written by Fred M. Newman, Helen M. Marks and Adam Gamoran. As a novice in the field of educational theory, I found their writing accessible and determined that their conclusions about authentic pedagogy might provide a road-map for exploring understanding in my own study.

The authors’ conception of authentic pedagogy takes root in a blend of active learning and intellectual rigor, presenting an idea of “instruction and assessment that remains consistent with active learning, but which also offers another critical element: it emphasizes that all instructional activities must be rooted in a primary concern for high standards of intellectual quality” (Newman et al. 1). This balanced approach supported both the active and cooperative nature of the Applied Design lessons, as well as a commitment to exploring these lessons’ ability to help students learn. In order to demonstrate that student achievement and understanding at the highest level, Newman, Marks, and Gamoran believe student accomplishments must fit three criteria: “construction of knowledge,” “value beyond school” and “disciplined inquiry” (3). Examining these criteria helped me identify markers of student understanding.

The first criterion relates to the type of task a student completes, and demands that students “face the challenge of constructing or producing meaning or knowledge, instead of

merely reproducing meaning or knowledge created by others” (Newman et al. 3). The burden of this criterion falls on the instructor, to create a learning activity that will challenge students “to solve a problem that can’t be solved by information retrieval alone” (Newman et al. 4). For example, to complete a traditional vocabulary assignment, students might be asked to look up words and their definitions, and reproduce that information through short-answer or multiple-choice questions. This is what the authors mean by information retrieval—and they propose that this approach does not ensure that students really make sense of the learning material. For students to experience deeper understanding, they must move through a process that requires higher-order thinking.

The second criterion (value beyond school) adds a level of connection that gives learning greater depth, by engaging students with the broader world and showing greater purpose for their learning (Newman et al. 3). Essentially, the authors are asking instructors to help students relate the learning that takes place within the classroom to the world outside the classroom. These connections might be related to specific career fields, to students’ personal experiences, or to public problems in “life beyond the classroom” (Newman et al. 3).

These concepts challenged me to create dynamic learning activities, and I believe that the discovery lesson plans developed for this study fit both criteria. The lessons require students to construct meaning, rather than reproduce it. They also present connections to the field of theatre, guiding students to follow processes that professional designers use in their work. These first two criteria serve as bookends: they create a context for learning. The student understanding gained within this context can be appraised through the last criterion, disciplined inquiry. In this

chapter, I explore disciplined inquiry as it relates to the discovery teaching methods of this study, and then use it as a lens to evaluate student understanding in each of the discovery lessons.

### Disciplined Inquiry and Applied Design

According to Newman, Marks, and Gamoran, authentic student achievement “must be grounded in a field of knowledge, which usually includes facts, a specific vocabulary and a set of concepts and theories” (Newman et al. 3). The lessons in this study investigated two specific fields of knowledge: language arts and theatrical design. Both these fields fit the definition above. Through the discovery lesson plans, students explored language arts through new vocabulary words, structure and content of a story, and figurative language. I also introduced new theatrical design concepts, such as use of color and texture to communicate ideas. Students then applied these to costume, scenic, and lighting design projects.

Grounding the discovery lessons in these specific fields, however, cannot alone constitute disciplined inquiry. The content of these fields has to be applied to something. Students have to use that information (in this case, the vocabulary, concepts, and theories that comprise language arts and theatrical design) to make choices—“to produce comparisons/contrasts, arguments, application of information to new contexts, and consideration of different ideas or points of view” (Newman et al. 2). In the context of the discovery lessons, students are asked to use language arts content to make and interpret design choices. The learning tasks require that students dig deeply enough into the language arts content that they can apply it in a new context: the design projects. In addition, each of the discovery lessons involved cooperative learning, which added the challenge of navigating not only their own point



of view, but those of their group members, of myself, and of Mrs. Z. This is the process that Newman, Marks, and Gamoran believe leads to student understanding at a deep and meaningful level.

The evidence of this understanding “is expressed through elaborate forms of communication that make use of written, visual and/or symbolic language to express ideas, nuances and details” (Newman et al. 3). In each of the discovery lesson plans, students were asked to communicate their ideas through their designs. For example, color and texture became elements of a language both visual and symbolic that students used to demonstrate their ideas. In addition, students were asked to verbally articulate the reasons behind their design choices through written planning worksheets and through oral presentations. These presentations included follow-up questions from me and Mrs. Z, and sometimes their peers, too.

Newman, Marks, and Gamoran specifically discuss asking “students to elaborate their understanding, explanations, or conclusions through extended writing” (Newman et al. 2). The authors go to great lengths to discuss the merits of such extended writing to demonstrate student understanding. However, I believe they neglect an equally “elaborate form of communication” when they ignore the kind of oral presentations described above. Particularly in the field of theatrical design, presenting one’s work orally to an audience is one of the primary vehicles for sharing one’s work. Similar use of presentations in the classroom can demonstrate student understanding as legitimately as written work. In Mrs. Z’s classroom, where many students fall below grade level in reading and writing, I also felt I might gain more insight by hearing students present their work to the class, than by asking them to write reflectively. Based on this belief, and on my understanding of disciplined inquiry, I examined student’s written planning sheets,

the design work they produced, and presentations of their work to the class for evidence of understanding. The results of this examination are detailed in the remaining sections of this chapter, looking at each lesson in chronological order throughout the week of the study.

I expected student understanding of the design concepts (such as the use of color and texture) to deepen across the week of discovery lesson plans, as students became more familiar and practiced with the design process. The design concepts served as consistent building blocks used in each learning task, although each lesson asked students to apply these design concepts to different aspects of the language arts content and to a variety of design areas. Alternatively, while I expected the discovery lesson plans to deepen student connection to the language arts material each day, I did not necessarily expect improvement across the week, because each lesson introduced a new language arts concept.

### Vocabulary Masks

As detailed in Chapter 2, the primary learning activity of this discovery lesson tasked students to work in small groups to embellish mask templates. Their goal: to represent a vocabulary word from that week's language arts study. Specifically, I asked students to use two elements of design in their creation: color and texture. To execute this task, students would have to demonstrate that they could break down the definition of their word and represent it in a new way, pushing beyond memorization of spelling and a given definition. In addition, students would demonstrate understanding of color and texture as a symbolic form of communication, weighting their design choices with deeper meaning.

The student group assigned the word “skill” initially chose to work with the color golden, to represent “being bright, smart and talented” (Vocabulary Mask Worksheet). Further discussion amongst the students prompted a debate about whether or not those qualities alone gave a person specific skills. “You could be smart but you don’t have a skill to build machines or use one,” Sky insisted (Fuss Journal). The group agreed to add the color silver to their masks to stand for “a skill to build machines” (Vocabulary Mask Worksheet) and displayed both these colors in a smooth texture, because “skills are easy when you have them,” and smooth seemed to them the best texture to represent ease (Fuss Journal).

Another group worked with the term “pioneer.” These students began by discussing all the things that pioneers have done, looking at the term in a historical light. They then matched the items on their list to design elements. Blue symbolized “the sea and the sky that pioneers explore” (Vocabulary Mask Worksheet). “Like in spaceships and sailboats,” Mikey added (Fuss Journal). The students selected red because “pioneers get hurt and start bleeding at war,” while brown represented the fields pioneers cultivated and the “plains they lived on” (Vocabulary Mask Worksheet). These colors were added to their masks through their chosen texture of wavy, using both two- and three-dimensional techniques to create a sense of “the ocean waves and the currents,” as well as the mountains, that pioneers traversed in their explorations (Vocabulary Mask Worksheet).

“Colonies” became the inspiration for a third group’s mask. Like the previous group, the students’ discussion clearly revealed that they were looking at the word through an historical lens, and that they understood the word “colony” in terms of the their knowledge of the United States’ past. The students chose colors that represented different aspects of a new beginning:

white, which made the students think of words like “new,” “happy” and “free,” green to represent new land and new life, and royal blue, to signify larger concepts like “liberty and justice” (Vocabulary Mask Worksheet). The group then settled on rough as the predominate texture for their masks, because “the colonies had a hard start” (Vocabulary Mask Worksheet). As they were adding these elements to their mask, Kyle offered an additional texture: woven. They used pencil lines to layer on this element, to represent the unity that enabled the colonies to survive. As Taco explained, “the people in them had to stay united” (Fuss Journal).

While five groups total created masks, the work of these three groups provides a sample that demonstrates varying levels of exploration into, and understanding of, the assigned vocabulary words. All three groups successfully reconstructed the definition of their term as they worked, with the students going beyond pulling direct words or phrases from the definition when explaining their design choices. These restatements in the students’ own words, to me, signified a deeper understanding of the words’ meanings than if they had merely quoted fragments of the definition given by their textbooks. Looking through the lens of disciplined inquiry, this showed me that in applying their knowledge of the vocabulary to a new context (the design process of creating the masks), they were successfully navigating the material to construct meaning for themselves

Most of the groups stayed fairly literal in their interpretations of their term and in their chosen design elements. For example, the pioneer group explored their term beyond the given definition, but stuck to very concrete experiences: traveling by boat to a new place, farming the land, and fighting with the people who already lived there. This concrete way of thinking

translated into very literal design choices, such as their selection of colors: red equals blood, blue equals water, and brown equals dirt.

A few groups surprised me by venturing into the poetic, using their chosen design elements to explore subtleties and nuances. The “colonies” group moved the furthest in this direction, juxtaposing both ideas and design elements to explore more abstract concepts. The rough texture they selected to symbolize struggle played against colors selected to represent more lofty ideas like happiness, freedom, and liberty. The final addition of the woven texture to demonstrate unity seemed to me a fairly sophisticated choice, revealing a deeper understanding of not only their given vocabulary word, but of the concepts this group associated with that word.

Most groups, including those not discussed in detail above, fell somewhere between these two extremes. Their masks displayed a blend of literal and abstract ideas, with most choices being fairly surface and quick, and a few showing deeper investigation. For example, the “skill” group mentioned above made some quick and literal design associations. They chose silver to represent machines, because many machines are actually silver. Their selections of golden for intelligence and talent pushed a little further, but as a whole, their work seemed to stay on the surface of their definition. Along those lines, I observed the group go with their first reactions and decisions, as opposed to discussing and weighing various options.

Looking at the class as a whole, though, I was pleased to see that all groups went beyond the minimum, and pushed beyond looking at the definition provided by their text. While the task itself demanded some level of symbolic reasoning, most students took the opportunity to really look at the concepts and stories behind their words and used their masks as a springboard to explore a variety of associations around their term. Mrs. Z seemed pleased with the exercise and

engaged in the groups' discussion as they planned their masks, asking questions about their choices. During the group presentations, she announced to the class, "We'll use this project again in other units" (Fuss Journal).

After the lesson, Mrs. Z commented on the struggles and successes of particular students. For example, she noted that during the work time, "students were having a difficult time at the beginning trying to figure out the concept behind building the mask" (Z Post-Study Questionnaire II). Later, however, she was surprised to see that students who normally struggle with their vocabulary assignments "truly understood the vocabulary word given" (Z Post-Study Questionnaire II). Relating these observations to the theory of disciplined inquiry, the challenge of navigating a variety of viewpoints pushed students to think more deeply about their own perspectives and to better articulate these ideas as the groups moved through the design process.

### Scenic Model Storyboard

In the design activity for this discovery lesson, which spanned two sessions, students worked in groups to create a scenic model representing a designated portion of the week's story, a narrative depicting the life of Benjamin Banneker. By the end of the project, the class would have a row of scenic models that represented the main events and ideas of the story in chronological order. Students began independently, by summarizing their assigned pages of the story. Then, through discussion, the groups decided on the three most important ideas of that section. From there, I asked the each group to choose specific scenic elements to represent those main ideas. Students were directed to consider making abstract choices in their scenic design,

that helped give visual clues about main ideas, rather than creating a literal setting alone (see Chapter 2 for more detail on the content of this lesson and its execution).

During the first session, groups focused on sections of the first half of the story. The first group's section set the background for Benjamin's childhood. These students chose to highlight the facts that, despite the time period, "Benjamin wasn't a slave," that "his grandpa was a son of a king in Africa" and that "he worked on a farm" (Scenic Design Worksheet). This group's model contained several larger-than-life elements crammed in together: a "giant gold crown" and massive throne for Benjamin's royal ancestry, a towering tobacco leaf, the crop that Benjamin grew up farming, and the Statue of Liberty, which the students selected as a symbol of Benjamin's freedom (Scenic Design Worksheet).

The second section of the story moved into more detail about Benjamin's childhood experiences, specifically exploring his education. This group wanted to call attention to the fact that Benjamin's education began at home, where "his grandma prepared him for school" (Scenic Design Worksheet). They also emphasized Benjamin getting to attend school, as well as his "curiosity," noting that Benjamin "wonders about the stars" (Scenic Design Worksheet). Most of the playing space in their model was dedicated to a representation of the cabin Benjamin grew up in. The group created a table stage left which held the family Bible, because, as Lilly explained, "that's how his grandmother taught him to read" (Fuss Journal). Opposite, stage right, laid the bed where Benjamin watched the night sky as he fell asleep. Upstage center a simple flat created an archway through which a red schoolhouse could be seen "in the background [sic]" (Scenic Design Worksheet). This schoolhouse played against a deep blue backdrop scattered with large, yellow stars.

The third group handled Banneker's teenage years. They noted that "he quit school to do more farm work because half of his family is gone," and so he had to study books at home. In addition, they noted "him making the clock," a feat the students seemed very impressed by, and also listed that "he had friends" (Scenic Design Worksheet). Their scenic design was fairly spare, and their model contained two main focal points. On the top stage right corner of their black backdrop, a bright blue shelf hung, calling attention to several enormous books. Upstage left, the students created a desk, upon which sat a giant clock.

The final group of the day noted that as the years went on, Benjamin "had to do all the work with his mother," and after her death, alone (Scenic Design Worksheet). He "has friends who are also farmers" and "is very gifted" (Scenic Design Worksheet). Group four's design was a fairly realistic take on Benjamin's home, with a flat representing his cabin. Other elements included a hoe, a tree, and "tobacco plants," with a blue sky scudded with clouds as a backdrop.

These groups represented varying levels of understanding, both of the story they were all exploring and of scenic design as it was introduced to them that day. Most groups selected main ideas from their pages as their three important ideas to represent scenically, but some students struggled with the difference between choosing ideas that were central to the story and facts that they happened to find particularly fascinating. For example, group one was entranced with the idea that Benjamin's great-grandfather was a king in Africa, and highlighted that with two large scenic elements while ignoring more predominate elements of Benjamin's childhood.

Group three made a similar choice with the clock. While Benjamin taking apart a friend's clock to find out how it worked, and then building his own working clock were both major events in their section, students failed to point out why this was significant in either their



planning worksheets or their group presentation. “They were so impressed with the act of making the clock alone that they did not pick up on the author’s intent, which was to underscore the deep sense of curiosity and investigation that Benjamin carried with him throughout his life, whatever obstacles stood in his way” (Fuss Journal).

With the exception of group four, whose realistic design of the setting only obliquely tied to their chosen main ideas, most of the students successfully ventured into the abstract with their designs. In this vein, the simplicity of group two’s choices helped to foreground their chosen main ideas, as did the extreme scale of group three’s design. Group one moved the farthest in this direction, with each idea represented by an immense (for the size of their shoebox model) visual symbol, with these pieces clustered together and juxtaposed against each other. While some of these chosen symbols might be considered anachronistic next to the story (the use of the Statue of Liberty as symbol for freedom in the 1700s, for example), they did show a willingness to push beyond an idea of realistic setting. Furthermore, these abstract choices aligned with their selected main ideas, drawing clear connections between the assigned reading and their designs.

The students’ work also demonstrated varying levels of understanding about their scenic model as a miniature representation of a set that could be used by actors onstage. This may have been compounded by the side-coaching of Mrs. Z, who “continually referred to their projects as dioramas,” rather than scenic models (Fuss Journal). This shift in vocabulary may have guided students to think about their work in terms of previous diorama assignments as opposed to a design project specifically related to the theatre.

Groups one and four left virtually no playing space in their models, instead filling as much of the available space as possible. Group three moved, possibly too far, in the other

direction. These students pushed their scenic elements as far upstage as possible, to “make sure the actors have room for their acting [sic]” (Fuss Journal). Group two successfully found balance between these two extremes. The placement of their scenic elements created multiple actor pathways and playing areas, and they were also the only group with scenic elements specifically designed for actor interaction. As Niomi explained, “the actor who is Benjamin could get in that bed, and go through that door of his cabin, and read that book” (Fuss Journal). This variance in student understanding revealed the need for further instruction, and I was able to use all the students’ models as examples the next day when I explained the concept of playing space in greater depth.

As limited class time prevented formal presentations of the models that day, and there seemed to be some shared areas of confusion, I added a few activities to the start of the next session’s lesson. I began by distributing a worksheet to the students, with photographs of the four models created the previous day in random order. They were tasked with numbering the models to fit the sequence of the first half of the story. We then discussed their choices as a class. While group three’s model proved difficult for students to identify, given that most of the first half of the story takes place on Benjamin’s family farm, most students were able to use process of elimination to help sequence the model. Key elements like the school, stars, clock, and crown helped students to find the matching passages in the story.

When taking these photographs the day before, I added a small human figure to represent an actor, to help communicate to students the concept of their designs as working stage scenery. We spent a few minutes exploring the available playing area in each model, and also using the figure to further discuss the idea of scale. This dialogue did seem to affect the remaining three

scenic models created that day. Each group that session placed their scenic elements in ways that created multiple playing areas, and all groups discussed actor interaction with their set pieces in their presentations. Students appeared to grasp the idea that the models represented small versions of what could be built onstage. In addition, their discussion indicated that they were working to address some of the requirements of a scenic design, such as playing space.

In addition, the use of a figure seemed to specifically affect student's selection of scale. In two of the three groups, it prompted students to stick to a fairly realistic scale. One of these groups, for example, liked the idea of a tent "that was the actual right size for a person to hang out in" (Fuss Journal). The third group gravitated to the idea of a massive scale. Their pages, the final section of the story, discussed Benjamin's almanacs and their lasting effect. This inspired students to create a scenic design that served as a sort of forest of towering books. When I stopped by to check on that group's progress, Autumn moved their figure around their model with great animation, exclaiming, "you could pop in and out and hide all over!" (Fuss Journal).

By the end of the second session, I was pleased with the students' overall comprehension of scenic design. As a whole, student choices seemed more thoughtful and supported than they had the day before. The improvements were small, but they indicated progress. For example, while some students still struggled with making abstract choices, they articulated the reasons behind their choices clearly and in a way that connected to the story. For the most part, their economy of visual choices impressed me, as did their clear representation of the main ideas chosen. Their specificity also improved during the second set of models, as did their expression of how actors could use the designs each group created. Through the lens of disciplined inquiry,

this indicated that as students continued to explore the design process, they became more adept at conversing in the visual and symbolic language of design. I was also glad to note that students were able, during the second scenic design session, to correctly sequence the models created the day before. This helped to reinforce my notion that students were strengthening their comprehension of the story through this activity, and that their models could indeed serve as a storyboard of the major events and ideas therein. Their detailed (or “extended,” as Newman, Marks and Gamoran would say) explanations also demonstrated that students were creating a deeper understanding of both the language arts and design content as a whole.

Mrs. Z’s feedback supported this impression, as she wrote, “During this week’s written comprehension assessment, students seemed to have a better understanding of the story... I was very impressed to see how several students were able to pick out details from the story and show that in their designs” (Z Post-Study Questionnaire II). Prior to the second scenic design session, Mrs. Z mentioned that she had no idea her students were “such talented artists” and seemed particularly impressed with their ability to execute their ideas with nothing but “paper and a shoebox” (Fuss Journal). While on the surface these comments relate to artistic skill, ultimately, they reflect on students’ ability to communicate visually—one of Newman, Marks, and Gamoran’s markers for understanding through disciplined inquiry.

### Mood Lighting

The final two sessions were devoted to lighting. On the first day, students explored the tools in their lighting design kit (flashlight, gels, and gobos). As a whole group, we discussed how lighting can help to set a specific mood, both onstage and everyday in the world around us,

and then compared this to the way an author uses descriptive language to help create a specific feeling with their words. In groups, students were assigned a short passage containing descriptive language, and each group was given the scenic model that represented the pages of the story that held their particular passage. I directed students to dissect this quote and decide together what information they thought the author wanted to share, as well as the feeling or mood created by the author's words. Students spent the remaining time playing with the tools in their design kit, looking at the effects of different colors and patterns on their models.

The second session more specifically brought in the lighting design project of this discovery lesson. As students reviewed their passage, I asked the groups to select a color and texture that would help communicate the mood they had identified the previous session. Students used the gels and gobos in their kits to light their scenic models based on these design choices.

One group worked from the passage, "But school had made Benjamin hungry to learn. He still kept his eyes on the sky" (Imagine It, 269). The students determined that "the author wanted to share that school had made Benjamin admire learning," and the mood created for the students centered around two ideas: desire and determination (Lighting Design Worksheet). As Mikey wrote, "The feeling we sense is Benjamin craving school. We also sense no intention of giving in." This group chose a variety of colors: green, "for boredom in the fields of tobacco plants" (Lighting Design Worksheet), and mixed red and orange together "for the jealousy of people who are able to go to school" (Fuss Journal). The gobo they selected shattered the light with rough, jagged lines, and was chosen because "the pattern the gobos make are like somebody is getting out of something. Benjamin wants to get out of fields, into school" (Lighting Design

Worksheet). During their presentation, Max elaborated, “Like someone ripping to get out of something, or escaping something” (Fuss Journal).

Another group explored the words, “Stars sparkled in the inky-black sky... Sometimes a star seemed to shoot across the sky. Benjamin wondered why” (Imagine It, 268). This group had varied responses to the mood created by the author’s words. Silv wrote, “Proibly he felt kinda amazed,” while Kyle commented that “the author made me fell [sic] so sad” (Lighting Design Worksheet). The remaining three group members agreed that the words inspired a sense of “curiosity” (Lighting Design Worksheet). The group battled long and hard but finally settled on the color blue. “We chose blue because it makes us think about criosity cus its rare [sic]” (Lighting Design Worksheet). This group also failed to choose a gobo “because none of them match curiosity” (Lighting Design Worksheet). The students struggled to articulate or justify their choices beyond this, in both questioning by me and Mrs. Z while they worked, and during their presentations.

These two groups represent the two extremes to which students seemed to gravitate. Most students were successful in articulating a feeling or mood evoked for them by the authors words, but then had mixed success translating these discoveries into their lighting designs. Like the “curiosity” group described above, about half the groups seemed to make fairly arbitrary choices. The students were enamored with the tools in their lighting design kit and, instead of thinking about the meaning of their passage, seemed to have trouble diverging from the gels and gobos they liked best.

For example, as I circulated throughout the groups, I noticed that one group had fallen in love with a particular combination of green and pink light on their scenic model, but could not

justify their choice. “It’s just really nice, Ms. Fuss. Look at it!” insisted Niomi (Fuss Journal). I encouraged them to think about it a bit more. However, rather than re-examine their choices and consider alternatives, the group came up with and presented an explanation that felt forced, and related to their specific passage only in the most surface way. “The color we chose was green and pink because they’re different and Banneker wondered about different things” (Fuss Journal). This explanation also failed to identify any specific reason for green and pink being the “different” colors selected.

Conversely, about half the groups made fairly sophisticated design choices, and managed to thoughtfully consider the use of each gel and gobo to determine which fit their passage best. These students were able to articulate the reasons behind their choices. For example, the “hunger to learn” group mentioned above explained that the orange-red they selected for jealousy felt “strong and burning, he wanted school so bad” (Fuss Journal). Another group, dealing with concept of Benjamin’s fame in later life, selected a gobo that “looks like the earth and it reminds us of people reading his almanac all over the world” (Lighting Design Worksheet).

One group fell somewhere between these two extremes. Their decisions were thoughtful, but stayed in the realm of the literal. Their passage described how “it was hard work for a six-year-old boy. The sun baked his back as he cut weeds with his hoe” (Imagine It, 266). This group explained, “We chose a purpleish redish color to look like the sun is baking on his back” (Lighting Design Worksheet). During presentations, Nicole talked about the group’s choice of gobo, which looked like a series of cracks. “Say if you were to have a mirage, it would look like the sun was cracked. He might see a mirage because he’s exhausted” (Fuss Journal). Thus,

while this group was able to align each choice with justification from their passage of the story, they worked to recreate a more literal visual concept, and employed less symbolic thinking than some of the other groups.

Overall, the students seemed to have a fairly strong grasp of how the author used words to create mood, but many students struggled to express this visually through their lighting designs. While all students were eager to participate in the activity, this enthusiasm seemed to cripple some group's ability to focus on the specific directions of the assignment. Mrs. Z seemed to share my mixed feelings about the student work in this discovery lesson. She noted, "Some students seemed lost in this part, chose colors just because" (Z Post-Study Questionnaire II). However, she also wrote, "It seems to me that some students really understood what was asked of them. Their emotions and almost poetic reactions were shown when they tried to explain to me why they had chosen such colors. Very neat" (Z Post-Study Questionnaire II).

### Conclusions

Each of the discovery lessons sought to teach students both language arts and theatrical design concepts, and because each of the lessons explored new content related to both fields, it is perhaps not surprising that they each yielded different levels of student understanding in the two areas. The lens of disciplined inquiry helped to focus my own concept of student understanding, and the data (as detailed and discussed above) led to a variety of conclusions about the relationship between the discovery teaching methods and student understanding. These conclusions are discussed in the following paragraphs.



Regarding student understanding of design concepts explored, the Vocabulary Masks seemed the most accessible to the largest number of students. In terms of disciplined inquiry, the amount of field-specific information (in this case, a word and its definition) that students were asked to place in a new context (the design process) was relatively small. However, this small amount of information given by each definition seemed to open up a broader exploration for the students. Perhaps because it was relatively easy to grasp, the definitions served as an exciting springboard into the world of design. Almost immediately, students were able to understand the use of color and texture as symbolic communication, and thus to make thoughtful design choices that they were able to articulate and explain. This same understanding of the design process revealed a solid understanding of the vocabulary words themselves. The words informed the design choices, which informed deeper understanding of the word, which, in turn, prompted closer look at the design choices, and so on. Exploration of one discipline enhanced understanding of the other in a reciprocal relationship.

The Scenic Model Storyboards provided an opportunity to witness student improvement in the scenic design process, since students created two different models across two sessions. While it took more time for students to master the concepts in this lesson (as compared to the Vocabulary Masks), the complexity demanded of students yielded exciting results, particularly on the second day of creating models. Students became better versed in the symbolic language of design, and in turn used this language to become more specific when articulating the language arts elements of the lesson. Again, the interdisciplinary nature of the learning task led to deeper understanding. While varying levels of student understanding were revealed (as defined by the theory of disciplined inquiry), the data does suggest that both the Vocabulary Mask and Scenic

Model discovery lessons led to student understanding of theatre and Language Arts concepts (such as being able to identify and explain the main ideas of a reading selection, for example) .

The greatest struggles accompanied the Mood Lighting project, which surprised me. While I considered this project to be the most advanced, I had anticipated that the previous discovery lessons would scaffold student learning enough to prepare them for their lighting designs. However, student performance during this discovery lesson indicated that I did not prepare them well enough for the design task. In addition, I did not take into account how distracting the tools would be for this fourth grade class!

This meant that many students struggled to place their understanding of descriptive language in the context of light. Placing knowledge in a new context was one of the elements of disciplined inquiry that I hoped to achieve through this lesson. However, the challenge of relating one relatively symbolic idea (descriptive language) to another (lighting to create mood) was perhaps too large a leap from the previous lessons. I was impressed, however, by the groups who pushed through their initial excitement with new materials to make strong, justified decisions. This suggests that such a learning activity could likely yield deeper student understanding, but more support in helping students to understand both fields and their relationship is warranted.

That said, each of the discovery lesson plans seemed to further student understanding of the language arts concepts explored in each session: vocabulary, comprehension, and descriptive language (albeit to differing extents). While I can only comment on the understanding I saw students gain during my sessions with them, Mrs. Z was able to describe the effects of the discovery lessons in comparison to previous weeks: “Students demonstrated better

understanding with the selection's vocabulary. Author's point of view, purpose, and main idea areas also showed improvement... In fact, two students that usually score poorly in class, scored two letter grades higher [on the standard weekly written comprehension assessment]" (Z Post-Study Questionnaire II). Knowing that my impressions of student understanding, as viewed through the lens of disciplined inquiry, align with Mrs. Z's standard assessment methods prompts me to believe that there is indeed a positive relationship between Applied Design and student understanding—a relationship I hope to explore in future work and through further study.

## CHAPTER FOUR: STUDENT ENGAGEMENT

When designing this study, I identified student engagement as an integral element in a successful lesson, because engagement impacts student motivation so significantly. To assess the usefulness of Applied Design as a teaching tool, I needed to know if the discovery methods caught and held student interest and if they kept students involved. In past work as a teaching artist, I tended to trust my gut—engagement was just something you could see. It either “was” or “wasn’t.” For the purposes of this study, however, I needed to articulate my discoveries around engagement in a formal way.

To do this, I realized I needed a guide through the landscape of student engagement. How would I define the kind of student interest I sought? How would I know it when I saw it? In my preliminary research, I found a great deal of general talk *around* engagement, but it lacked the specificity I desired. Eventually, I discovered “School Engagement: Potential of the Concept, State of the Evidence.” This article analyzed the body of research exploring student engagement, while also creating clear definitions that I could understand and employ as a novice researcher. In this article, authors Fredricks, Blumenfeld, and Paris identify and define three specific types of engagement: behavioral, emotional, and cognitive (Fredricks et al 60). These definitions became a roadmap for my own exploration of student engagement. In this chapter, I discuss these definitions and apply them to the data collected around the discovery lessons.

For Fredricks, Blumenfeld, and Paris, behavioral engagement examines participation and investigates student conduct, especially as related to the rules and norms of their classroom community. Essentially, behavioral engagement has to do with staying on task—students

“behaving” as they should to in school situations (this is subjective, and can vary depending on an individual school or classroom). Identifying positive behavioral engagement involves both looking for signs of positive behavior, and noting the absence of negative behavior (Fredricks et al 62).

Emotional engagement “refers to students’ affective reactions in the classroom, including interest, boredom, happiness, sadness, and anxiety” (Fredricks et al 63). While emotional engagement can encompass these reactions, emotions, and attitudes in terms of a student’s total school experience, for the purposes of this study I examine emotional engagement specifically as it relates to the discovery curriculum (as opposed to their reactions to me as an instructor, for example, although I recognize that this may be an influence regardless of my lack of focus on that aspect).

Cognitive engagement is perhaps the trickiest of the three types of engagement to recognize and document. Cognitive engagement “stresses investment in learning... a desire to go beyond the requirements, and a preference for challenge” (Fredricks et al 63). The remaining two types of engagement can be observed with comparative ease, but how does an instructor recognize and document that a student is pushing beyond, seeking challenge and taking ownership over their own learning experience? For most teachers, this becomes a qualitative assessment formed through a combination of their own observations and reflections with student self-reporting.

For researchers, this determination is made in similar ways, not only in assessing cognitive engagement, but emotional and behavioral engagement as well. Student and teacher experiences and reactions are collected and examined. While some quantitative strategies have

been developed for observing all three types of engagement, for the most part, the study of student engagement as a whole remains a qualitative and subjective pursuit (Fredricks et al 67-68). For the purposes of this study, that determination remains true, as I examined the data collected from myself, the students, and Mrs. Z in an attempt to draw conclusions about the effects of the discovery lessons on all three types of engagement.

### Behavioral Engagement

In examining the data collected for evidence of behavioral engagement, I focused on two aspects of the definition provided by Fredricks, Blumenfeld, and Paris: “positive conduct” and “involvement in learning and academic tasks” (62). To address the former, I looked for examples of student behavior as related to following rules and directions, which included keeping an eye out for disruptive behavior (or the absence of it). In exploring the latter, I looked for behaviors “such as effort, persistence, concentration, attention, asking questions, and contributing to class discussion” (Fredricks et al 62).

Throughout the week, the discovery lessons followed similar scaffolding. Each discovery lesson opened with full group instruction that transitioned into either an independent task or straight into the primary learning activity of the day: the design task, completed in small groups. For example, the first discovery lesson (Vocabulary Masks) opened with a full class brainstorm. As we explored the definition of design, and then specifically theatrical design, students were quiet and focused. They directed their attention towards the front of the room, where I recorded their thoughts on the board. Students raised their hands to be called on. I knew from my discussion with Mrs. Z that this was standard protocol for full-group instruction, and

followed this guideline as we moved into brainstorming associations with shape and color. Though students still raised their hands to be called on, more students contributed to the discussion, which became quick-paced and lively. I observed that “students seemed eager to participate, with fingers stretching tall as they hoped to be called on. They each wanted to share their connection [to the shapes and colors]. I felt an animated energy in the room” (Fuss Journal).

I made similar observations to subsequent brainstorming sessions throughout the week of discovery lessons. Sometimes, students brainstormed as a full class (as described above). Students also followed the “think-pair-share” method (students consider a given topic, discuss with a partner, and then share the thoughts they generated together with the group). No matter the format, I observed nearly full participation from all students during these tasks. Based on these observations during days one and two, it surprised me that I did not see the same level of participation in all types of full-group instruction. Later in the second lesson, for example, we worked as a class to break the first half of the story into chunks and summarize each section. This more complex activity drew participation from a small group of students. “Much of the class seemed to ‘zone out,’ and if I called on these students, their answers indicated that they were not really ‘with us’” (Fuss Journal).

As the next step in the process, I assigned students to one particular section of the story, and they worked individually to record a summary of their assigned segment. Having seen mixed results in the activity leading up to this task, I was not sure what to expect. “The distribution of worksheets seemed to act as a kind of trigger—all students picked up their pencils and went to work. Even students who raised their hands with questions about what to write

seemed focused on the task” (Fuss Journal). I noted a similar focus and level of participation when students completed worksheets in the third discovery lesson, as well.

Following these types of introductory activities, each discovery lesson transitioned into the design activity for the day. During the first discovery lesson, I observed the dynamics of the small groups working to design and construct their vocabulary masks. As I moved among the groups, I noticed that nearly all the students participated in the group discussion without needing prompts from me or Mrs. Z. They each wanted a say in which materials should be used, and passionately defended their reasons why. “A few groups were nearly combative in their discussions. Nothing too drastic happened—probably because Mrs. Z and I were drawn to these groups and helped to negotiate their conflicts” (Fuss Journal).

These observations highlighted an interesting dichotomy in terms of behavioral engagement. The group discussions certainly displayed strong elements of participation: effort, persistence, asking questions and contributing to the dialogue. However, students also seemed to forget (or disregard) some of the standard rules of their classroom community. Their voices and words sometimes lacked respect for their peers, and volume levels rose beyond what was deemed appropriate by Mrs. Z. Thus, in this instance, the rise of one aspect of behavioral engagement (participation) seemed to correspond with a decrease another (following rules and directions).

This tension revealed another: a difference in my priorities and those of Mrs. Z. I felt comfortable with a louder classroom, provided that the volume was a result of passionate student participation. I also wanted to give students a chance to resolve group conflicts on their own before getting involved. Mrs. Z, however, “appeared anxious at the first sign of disagreement”



and “revealed her preference for a calm and quiet classroom” (Fuss Journal). This helped to complicate my understanding of behavioral engagement. Because behavioral engagement is based in classroom norms, and students doing what they are “supposed” to do, assessing it becomes subjective. My idea of appropriate behavior did not always match Mrs. Z’s. However, as a guest in her classroom, I did my best to support her rules and structures for student behavior. Some of these (like her preference for a lower noise level) I learned as I went.

We both, however, noticed and remarked on the level of student participation. “They are so into it,” Mrs. Z mentioned at one point (Fuss Journal). Across the week, I witnessed consistent levels of participation during small-group work. Small conflicts also continued to occur, although not every group encountered conflict each day. While some students certainly emerged as leaders in the small groups, I never saw any students who were completely excluded from the discussion. For the most part, students pushed to become a part of both the conversation and the hands-on process of completing the design task.

Based on all these observations, it seems that behavioral engagement levels remained fairly consistent across the discovery lessons. No one design structure inspired unique behavior—students functioned similarly whether we worked on masks, scenic models or lighting designs. Rather, the types of activities used to explore those structures revealed varying levels of behavioral engagement. Throughout the week, behavioral engagement was at its highest during independent activities (like worksheets) and small-group work. Behavioral engagement was also strong during brainstorming activities. However, when full-group instruction became more complex, demanding a higher level of critical thinking and response, behavioral

engagement seemed to drop off. Even with the drop in participation, though, there were no incidences of highly disruptive behavior.

I must note that the data collected on behavioral engagement is somewhat lacking: for the most part, students responses on the pre- and post- study questionnaires revealed little with regard to behavioral engagement, and Mrs. Z's revealed little as well. My own observation of student participation forms the basis of my conclusions on this topic. Without data from other sources, it is hard for me to draw sound conclusions about the relationship between Applied Design and behavioral engagement. Through this study, my understanding of behavioral engagement has grown tremendously, and in future study I would like to use this understanding to do a better job of gathering data from other sources.

However, despite the limitations of this study, I do feel comfortable noting that using Applied Design as a teaching methodology lends itself to two types of learning activities: brainstorming (whether in pairs, small groups, or as a full class), and small-group work (both discussion and hands-on activities). As I implemented these types of activities through the discovery teaching methodology, I consistently observed evidence of behavioral engagement.

### Emotional Engagement

To explore the effects of the discovery teaching methods on emotional engagement, I looked for evidence of affective reactions. Essentially, I examined the data to find examples of students' feelings about the discovery lessons. What lessons (or aspects of them) did students like and dislike? What specifically interested or bored them?

I became especially interested in the results of these questions, because I knew that Mrs. Z's excitement about participating in this study stemmed from her desire to engage her students. Throughout the study, she made it clear that engagement is an integral factor in the kind of learning atmosphere she hopes to create in her classroom. More specifically, I believe Mrs. Z seeks learning activities her students will find emotionally engaging. When responding to a prompt that asked her to reflect on student engagement in her Pre-Study Questionnaire, many of Mrs. Z's statements began with words and phrases such as "they enjoy" and "are eager." These words imply reactions and attitudes, both aspects of emotional engagement. During our first meeting, as we discussed what attracted her to arts-integration projects like this, she commented, "When I'm bored, they're bored. And when they're bored they don't learn" (Fuss Journal). Essentially, Mrs. Z indicated her belief that emotional engagement is akin to the starting line: it affects behavioral and cognitive engagement, and ultimately, student understanding. To Mrs. Z, emotional engagement is the key to motivating her students to learn.

In examining the data, it occurred to me that emotional engagement with a given activity is, perhaps, the easiest for participants to talk about (just as behavioral engagement seems like the clearest for an outside observer to recognize). Because it involves attitudes and emotional reactions to things, this type of engagement feels natural to discuss. At its simplest, emotional engagement has to do with what a person likes and dislikes, and these types of statements, in both teacher and student questionnaires, comprised the majority of the participants' responses relating to engagement.

In the Student Pre-Study questionnaires, while there was variety and contradiction amongst student articulation of what they liked and disliked about Mrs. Z's existing Reading

Block, I also noted agreement in several key areas. For example, the questionnaires revealed a high indication of emotional engagement with small-group work, drama activities, and games. For example, many of the students cited liking the part of Reading Block devoted to “centers,” in which small groups of students congregate at specific areas of the room for a given activity. In centers, students engage in hands-on activities (such as games and art projects) related to their reading content or to reading skills. Based on the Pre-Study questionnaires completed by both Mrs. Z and her students, I was curious to see if the discovery curriculum would likewise emotionally engage the class.

Throughout the discovery curriculum, I observed students whose faces brightened and posture straightened when I began my lessons, and who smiled and used positive language when reacting to our lessons. For example, both the students and Mrs. Z chose words like “eager,” “cool,” “enjoy,” “exciting” and “fun” when describing our week together as a whole (Fuss Journal; Post-Study Questionnaires). Of all those words, variations on “excite” popped up again and again. As one student, Silv, wrote, using theatrical design to learn during reading block “makes you excited” (Student Post-Study Questionnaire). This thought was mirrored by other students, who recorded responses that described the discovery methods as “fun, exciting [sic], and easy to understand” and “actually helpful and it makes you excited” (Student Post-Study Questionnaire).

However, my own observations revealed a more complicated picture of emotional engagement during implementation of the discovery lessons, as levels of emotional engagement often varied throughout an activity. On the first day of the discovery lessons, I reflected on the start of our design activity. “The students were clearly excited as we began to split into groups.

A few even bounced in their chairs! And all across the room were smiles, focus and interest directed towards me as I explained the upcoming task, and voices bright with enthusiasm as students asked questions” (Fuss Journal). Once groups began planning their designs, however, I observed that emotional engagement levels varied. In several groups, students were so passionate about their individual ideas that group conflict ensued. Sometimes, these conflicts seemed to create intense frustration; I observed raised voices, furrowed brows, passionate gesticulations, and vocal tones that indicated some level of distress. These conflicts did not trouble me (I believe working through challenges yields creative and thoughtful result), but I wondered how the struggles would affect student motivation. Mrs. Z picked up on the discord as well, writing that she saw her students struggle with “making decisions as a group” (Z Post-Study Questionnaire). Once these conflicts were resolved (sometimes with intervention by Mrs. Z or myself), however, students returned to being emotionally engaged.

I saw this pattern repeat in each of the discovery lessons, although not always in every group. Student responses to the Post-Study Questionnaire mirrored my observations. Often, students commented on a lesson or activity they particularly enjoyed, while also noting their struggle with resolving group conflict. For example, despite declaring the lighting design activity his favorite, and noting how “fun” it was, Curly also commented that he disliked it when “people disagreed [sic] with me and I dint know why they liked there jels [sic]” (Student Post-Study Questionnaire). Justin noted that “it took very long to discuss who was going to do what” (Student Post-Study Questionnaire). The relationship between group cooperation to emotional engagement evidenced in another way when Eric wrote that he liked the lighting lesson so much because “I worked every detail out with my group” (Student Post-Study Questionnaire).

The data also revealed another factor that seemed to affect student levels of emotional engagement. Throughout the implementation of the discovery curriculum, I observed strong student reactions to the physical materials I provided for each design activity. This connection evidenced itself even before I started the first discovery lesson, as students were clearly intrigued by the supply boxes on display when they entered the classroom the day of the first study-related lesson. Their curiosity was piqued.

Later, during the mask activity itself, the students' emotional reactions grew as they investigated their supply boxes. It appeared to me that they were less excited about the masks themselves, than with the discovery of bubble wrap, tin foil, and the variety of papers, adhesives, and drawing instruments they could use to embellish the masks. "In their initial enthusiasm over the supplies, the masks themselves were almost forgotten. Every student wanted to touch the bubble wrap, feel the crinkles of the tin foil. They shared their findings with each other through exclamations of 'ooh!' and 'look at this!'" (Fuss Journal).

This process of surprise and discovery became part of the discovery lesson routine. For example, during the days spent creating scenic models, the students were greatly excited by the shoe-box stages and by creating three-dimensional creations out of paper. They felt immediate ownership over the shoe-box stage given to their group, and took pride in the set pieces they created. While shoe-boxes and construction paper were certainly nothing new to the students, this project explored the process of transforming everyday things into something new.

Although Mrs. Z did not reflect on student interaction with the materials (aside from noting that they enjoyed the "hands-on" nature of the lessons), the students themselves did. Justin wrote about liking the process of making scenic models "because you got to tape or glue a

thing you made on a box” (Student Post-Study Questionnaire). During these same discovery lessons, Niomi commented that she “liked using paper to make tiny furniture,” and Cate craved “more colors from the box” (Fuss Journal).

This relationship between emotional engagement and physical materials continued to evidence itself in the discovery lessons on lighting design. During these lessons, students played with gel and gobos in an activity with lowered classroom lights. These were complete novelties to the students: materials they had no previous knowledge of presented in a new kind of classroom environment. In this case, emotional engagement with the materials was so high that it threatened to derail the other aspects of the learning activity. The students were having so much fun exploring the physical materials that their focus drifted from the purpose of using those materials to explore the week’s reading.

The majority of Post-Study Student Questionnaires also indicated emotional engagement with the lighting lessons, and these lessons were the only ones that no student cited as being a lesson they did not enjoy. “We got to use objects that i’ve never heard of. Also we got to turn off the lights and use flashlight [sic],” wrote November in her questionnaire, explaining why this lesson was her favorite. Lilly was drawn in by the connection to a local theatre, and wrote, “We played with the lights. It was so fun we got to expirement with the actual gels and gobos and they use at the Rep [sic]” (Student Post-Study Questionnaire). Of the student responses that related to lighting, nearly all of them specifically mentioned completing the activity in a darkened classroom, or the use of gels, gobos, and flashlights.

With regard to the various design activities’ materials, I also noticed another phenomenon that affected the emotional engagement of the students. In design activities in

which students created a physical product (like the masks, or scenic models), being able to take possession of that product became important. Students told me that they wanted to make their own mask, or that they wanted to take their masks home, for example, and show them to their families. As the project progressed, I noticed one student in particular whose responses to group discussion became listless or non-existent. Seeing his effort slow in pace compared to his peers, I asked him why he was no longer participating. “He told me, ‘well I don’t care if I can’t keep it’” (Fuss Journal).

In fact, a few students’ earlier positive reactions to creating the masks turned somewhat resentful when they realized that they were building a communal mask, and I noted that this resentment lessened their behavioral engagement with the project. Student responses on the Post-Study Questionnaires also reflected these reactions, further indicating a relationship between the students’ sense of ownership and their emotional engagement. For example, when citing an example of an activity she disliked, Niomi wrote, “I didn’t like when we did the masks because I would have liked to do that individual so we could all were [sic] our very own” (Student Post-Study Questionnaire).

Even Taco, who selected the vocabulary masks as his favorite lesson of the week wrote a suggestion for my work with future students: “also you could have them make there [sic] own mask” (Student Post-Study Questionnaire). In some ways, this desired personal ownership indicted *potential* emotional engagement—the students wanted to connect to the project so much that they wanted it to be something they could keep or hold on to in some way. In the scenic design projects, learning that photographs would be taken of their group’s model seemed to re-



direct the attitudes of students disappointed by the mask process, and reinforce their concept of ownership over their work.

Although the relationship between the discovery teaching methodology and emotional engagement proved complicated, nothing seemed to totally overwhelm the notion that Applied Design was an “exciting” way to learn. Overall, students connected to the projects enough to want to push through the sometimes difficult process of group communication, and came out on the other side with positive things to say about the process. The strongest trigger of emotional engagement seemed to be tactile and visual experiences with the physical materials the students manipulated during each design activity. Furthermore, the more unique those “things” were, the more I noticed signs of emotional engagement (as in the Mood Lighting lesson). Applied Design methodologies provide ample opportunities for interaction with physical materials, and for a sense of novelty to be created in the classroom. Based on the data produced in this study, I suspect I would find a positive relationship between Applied Design and emotional engagement in other classroom settings, as well. Hopefully, future study will provide the opportunity to continue to explore this connection.

### Cognitive Engagement

Fredricks, Blumenfeld, and Paris discuss cognitive engagement “as a psychological investment in learning” (67). This investment evidences itself in student effort that pushes beyond what is required by a given a learning activity and prompts students to explore content more deeply. Cognitive engagement involves “being committed to understanding the work, in contrast to wanting to get a good grade or wanting to look smart” (Fredricks et al 67). In

examining the data for evidence of cognitive engagement, I sought examples of this commitment to understanding, including instances of “flexible problem solving, preference for hard work, independent work styles, and ways of coping with perceived failure” (Fredricks et al 67).

Initially, I had some misgivings about looking for signs of cognitive engagement, because of the timeline of my study. One week of discovery lessons with little time in the classroom before or after these lessons did not seem sufficient to discover in students a possible “psychological investment in learning.” Certainly, during the course of the study, I did not observe any behavior that might indicate cognitive engagement relating to the reading itself. While students seemed interested in Benjamin Banneker, there was no indication that students were curious beyond the scope of what was presented to them in the reading. They simply took the information at face-value. However, as I considered the connections between emotional and behavioral engagement, I began to suspect that the design processes themselves might inspire cognitive engagement.

For example, during the discovery lessons, emotional engagement typically seemed to precede behavioral engagement. Positive student attitudes about the work at hand prompted them to complete the assignment in the set time while following the guidelines established and observing standard classroom behavior protocol. When student attitudes were less positive, I generally observed that their attention and focus on the activity (aspects of behavioral engagement) decreased.

However, when working through a design process as a small group, students frequently struggled with communication and collaboration, which created frustration. Following their typical behavior, this should have resulted in decreased behavioral engagement. However, by

and large, student focus on the activity did not waver, despite the frustration. If anything, students became more passionately committed to the task—whether it was creating a mask, or choosing colors for a lighting design. To me, this indicates a willingness to work harder than necessary. In most the groups, conflict did not result in a desire to “quit,” nor did students consistently rely on Mrs. Z and me to resolve their differences. For the most part, they were willing to push through the hard moments on their own.

In addition, students sought every opportunity to question me further about the design process, especially fascinated by the relationship between what they were doing in the classroom and what “real designers do.” This information was not necessary for them to complete their assignments. It was not required—but it was related. Again, this indicated to me a strong possibility that a design-based curriculum could foster cognitive engagement in the classroom. I continue to believe that the timeline of this study is not sufficient for an effective inquiry into the relationship between Applied Design as teaching methodology and cognitive engagement. Based on the evidence from this study, I would never claim that a positive relationship between the two exists. However, I was surprised to look at the data and see the connections described above. These connections make me eager to set up a study more conducive to investigating this relationship.

### Conclusions

The more I look at the data related to student engagement, the more excited I become about continuing to study the use of Applied Design in the classroom. In particular, the relationship between emotional engagement, behavioral engagement, and the discovery teaching

methods continues to intrigue me. Applied Design is hands-on by nature, incorporating a wide variety of materials into a cooperative learning environment. In this study, these elements seemed to correlate with emotional engagement. In turn, this emotional connection to the work seemed to inspire participation at a strong level: behavioral engagement. Finally, this relationship seems to indicate the potential for cognitive engagement, were the use of Applied Design extended.

One of the most exciting things I observed about student engagement is its complexity—and its fluidity. Like oceans waves, the levels ebbed and flowed. Sometimes, having to push through a lack of emotional engagement in one moment seemed to lead to it the next. Moving through a difficult process perhaps led students to greater satisfaction in finding resolution than if the answers had come easily. Navigating these tensions was incredibly exciting and challenging for me as a facilitator. I hoped that students would be engaged with our lessons, and that this engagement would motivate them to work for deeper levels of understanding. I think this was often achieved—but I also saw times when students were very engaged in one of the learning activities, but also distracted from my primary learning objective. Finding balance among all these factors is one of the balancing acts that makes teaching an art.

Exploring the relationships between different types of engagement in this study has helped me articulate the kinds of observations that I only “sensed” or “felt” in previous work as a teaching artist. This study marks a small foray into examining these relationships. Certainly, further study is necessary before absolute conclusions can be drawn (if absolute conclusions can ever be drawn in education and the arts!). That said, I saw, in my own observations and in the words of the students and Mrs. Z, enough to know that Applied Design has the potential to help

shape levels of student engagement. Fredricks, Blumenfeld and Paris talk about student engagement as “crucial for achieving positive academic outcomes... It incorporates thoughtfulness and willingness to exert the effort necessary to comprehend complex ideas and master difficult skills” (60). Surely any teaching methodology with even the potential for effecting change in those areas is worth further study.

## CHAPTER FIVE: CONCLUSION

Prior to designing this study, I felt in my gut that Applied Design could be an exciting teaching tool. The glimpses I had seen in previous classroom work as a teaching artist indicated to me that such an approach could excite students about their learning processes, empower them to guide their own discoveries, and ultimately enhance their understanding of a given content area. However, these notions were rather vague, and I was not sure how to put them into words. A study of this kind, I believed, could help me articulate a solid defense of these teaching methods, and could also introduce Applied Design for future discussion by other practitioners. Although I never outwardly professed to study anything more than the relevance of one teaching methodology's value to myself, I must confess that I harbored quiet hopes that my research would prove pertinent to other educators and artists.

As I moved through the process of analyzing the data collected during this study, I began to have misgivings. The flaws in my study design became all-too apparent, and soon became all I saw. My means of collecting data seemed lacking, and so the data itself seemed incomplete. Because my study couldn't tell me everything I wanted it to, I began to feel like it couldn't tell me anything at all. During the implementation of the discovery lesson plans, I felt confident and excited. As I moved through the writing process, though, my morale seemed to crash down around me.

Returning to the inspiration for my study design helped me move through this place of insecurity, and encouraged me to look at my study in a more productive and critical light. I looked once more at the description of action research laid forth by Cohen, Manion, and

Morrison. “Action research develops through *the self-reflective spiral*: a spiral of circles of *planning, acting* (implementing plans), *observing* (systematically), *reflecting*... and then re-planning, further implementation, observing and reflecting” (229). These words helped remind me that the study laid out in this document is only the first circle in a larger spiral—the smallest circle, in fact, in my larger exploration of Applied Design in the classroom. An action research study is meant to raise questions, and to be refined again and again as the process moves forward. To that end, in this chapter, I address the some of the questions raised by my reflections on this study, with the goal of helping to refine future exploration on this topic.

### Time

The concept of time played a major role in my thoughts on this study. Originally, I planned to implement the discovery teaching method across at least a month of Language Arts units; due to time constraints of Ms. Z’s classroom, that time fell to one week. Within that week, the amount of time originally planned for Applied Design activities was frequently reduced by the demands of the instruction that immediately preceded it. Given the brevity of the study, it remains difficult for me to feel empowered to draw lasting conclusions about the use of Applied Design across the curriculum. No matter what data I collected during that time, how can I know how the discovery methods would have applied to other units? How can I know what students retained from our time together? I continue to wonder what might be learned from a longer study.

During the week I applied Applied Design to Ms. Z’s Language Arts unit, time affected our work in another way: classroom teacher buy-in. Despite Ms. Z’s appreciation for the results

of the new teaching methodology, she daily struggled with the time it took. I frequently felt that we rushed the design process to make it fit the time we had, and even that felt like a sacrifice to Ms. Z. It proved difficult for her to completely justify classroom time being used in this new way.

Classroom teachers are under increasing demands to meet expectations set by those outside their classrooms, and often their schools. Teachers are expected to inspire their students and prepare them to be the future leaders of our country, but they are not trusted to do this with methods developed through their own training and expertise. Instead, they are held accountable through state standards and standardized testing that bear little relationship to the kind of deep understanding most educators strive for. This creates a conflict between the goals of classroom teachers and the ways they are measured and held accountable. Because of this tension, throughout the study, I often wondered whether there are many teachers willing to take the time for arts integration, despite its potential to engage and enrich student understanding.

Mrs. Z was willing to try, but to make this study fit into her classroom, compromises became necessary. Time was one of those compromises. As a novice researcher, I felt intimidated about pushing for the things that were important to me. After all, I was a guest in Mrs. Z's classroom, and felt I needed to respect that. While that is true, to some extent, I have gained a greater sense of empowerment through this. I know now that next time, not only will I seek a study placement that can grant me a longer research period, I feel better able to articulate to a classroom teacher why a longer time-frame is important—to both my goals and their own. Ideally, I'd like to conduct a study that stretches across several months. I'd plan to spend some of that time getting to know the classroom and students and exploring what student engagement



and student understanding look like without the discovery methods. With this background, spending an extended length of time with the discovery methods would provide a basis of comparison and, I believe, greater insight into the merits of the discovery methods. It would also allow time to explore the issue of novelty. In this study, I sometimes wondered how engagement was affected by the “newness” of the discovery teaching methods, and if students would continue to be as engaged by Applied Design when the methods were more familiar.

Despite the challenges of finding a place to conduct extended research, I believe further research is vital to revealing the potential of Applied Design (and arts integration as a whole) to a greater number of classroom teachers. Unless we help give educators the facts they need to justify the use of the arts in their classrooms, there can be no future for arts-integrated curriculum.

### An Educational Context

Examining the effects of time on the discovery teaching methods became one piece of a larger puzzle. Further reflection revealed another area of opportunity for future study. As a teaching artist, my background is in theatre arts. As a classroom teacher, Mrs. Z’s background is in education. As a guest in her classroom, I needed to situate my work in that educational context. This seems obvious—and it’s what is exciting about teaching artistry. An outside expert is brought in to share another perspective, and a new process. However, most of my time was spent preparing and developing what I was bringing in from the outside. Looking back, I’m not sure I gave enough attention to the context I was placing it in.

For example, when conducting my research on student understanding and engagement, I sought writers who could make these concepts clear and relevant to me as an outsider. However, I did not have an understanding of how these authors' articles fit into the larger canon of work on these topics. In future study, I hope to become much more well-versed in the vocabulary and body of knowledge of educational theory itself. Though my expertise will always lie on the side of theatre, better situating my research in an educational context will help me communicate with a broader audience, and increase the relevance of my research.

### The Importance of the Art

Ms. Z's attitudes towards our time together raised other questions for me about the nature of my work as a teaching artist. For me, the "artist" piece of that title is as important as the "teaching" part. The two balance each other. While I aim to use the principles and processes of an art form to teach another content area, I also strive to instill in students a love of the arts, and to empower them with confidence in their own artistic voices. On multiple occasions, however, Ms. Z made it clear that her priority was not the art. To her, it was a means to an end: student engagement. Art made learning fun for her students, and they participated more avidly when learning was fun.

This became a major tension for me, and I struggled with what I saw as a dismissive attitude to the art itself. More than I anticipated, I felt caught in the middle between my own love of theatrical design and the obligation I felt to uphold Ms. Z's own classroom priorities. After all, I genuinely appreciate the generosity of her participation in the study, and she had every right to set her own expectations for the time used in her own classroom. I found myself

feeling anxious about any time I spent not directly and obviously connected to the Language Arts curriculum. This meant that I frequently rushed through hook activities designed to prepare students for the design work—the very projects that were created to help them delve more deeply into the Language Arts curriculum. Although I found great value in taking the time to prepare students for the design work, knowing that Ms. Z did not share this goal often caused me to push my own priorities to the background.

In the previous section, I discussed my desire to better situate my research in an educational context. Alongside that goal is my need to better express and support my own needs and wants as a teaching artist: to stand up for the art that I love, and its value as a part of the teaching process. In the future, I seek a balanced methodology that values both the art and the subject it's exploring equally. Despite the limitations of this study, I gathered enough evidence to believe that such balance could produce exciting results for both disciplines. In an arts integration lesson, shortchanging the art ultimately shortchanges the content it is paired with, too.

This study also prompted me to think more closely about the nature of theatrical design. However process-based, design ultimately needs a purpose. There has to be something, or someone, to design for. Throughout the discovery lessons, students designed to enhance the Language Arts lesson, and this began to feel convoluted to me. One of the students first prompted me to think seriously about the purpose of their design work by wondering why we were making masks that no one was going to wear—a good question. Another student suggested in her Post-Study Questionnaire that it might be a good idea to make the vocabulary masks, and then wear them while physically demonstrating the word's meaning in a sort of costumed charades.

From that simple question and suggestion, my thoughts exploded with thoughts about how to use theatrical design alongside traditional creative drama techniques. Design and performance complement one another in conventional theatre—how might they complement one another in the classroom? In future study, I hope to explore the use of both Applied Design and Creative Drama alongside each other. Pairing both disciplines together would, I think, only provide a larger set of tools for me to use in using theatre to teach core content areas.

### Data Collection

As I examined the data for evidence of student understanding and engagement, the limitations of my data frustrated me more times than I can count. Reflecting on the process as a whole, however, I am grateful for these frustrations. They reveal to me the areas that can be refined for future study.

For example, in designing the Pre- and Post-Study Questionnaires, I strove to create open-ended documents that led the respondents as little as possible. I worked hard to create statements that exhibited little bias or that projected a desired response. However, in so doing, I also created documents that were not always helpful. I asked for responses to statements that did not ultimately affect my data analysis, and I missed the opportunity to ask other relevant questions.

I also abandoned methods of data collection that might have served me well: video-taping treatment lessons and conducting student interviews. (Of course, even then I would have needed to ask the right questions.) Again, this is an area where compromise may not have been in the best interest of the research. With the experience I gained in this study, I feel that I am

better able to articulate the need for these methods of data collection, which will hopefully help me gain the necessary support of those involved in the study in implementing such methods.

Before approaching my next study, I plan to devote even more time to the study of study itself. Earlier, I discussed the need for a greater understanding of the educational framework around a study. Likewise, as I continue to grow in my knowledge of what it means to design and execute a study, my methodology will (hopefully) continue to develop in a way that yields more applicable and accessible results.

I'm also curious about the effects of bringing in additional members of the research team. Educational research is tricky, and methods seem to be in a constant state of flux as theories about learning shift. Although it would alter the self-reflective aspects of the study, I wonder how data collection (and interpretation of that data) might be affected by having an outside researcher observe as I taught through discovery teaching methods. Likewise, how might the outcomes shift if I placed myself as that researcher, and observed someone else as the teaching artist? Approaching Applied Design from this variety of perspectives might lead to new discoveries.

### Future Study

Throughout these chapters (this one in particular) I have mentioned again and again a desire for future study around Applied Design. There are so many aspects of this teaching methodology that I would like to explore further. In this chapter, I've already discussed a desire for an extended timeline, for improved data collection, and potentially, an expanded research team. I would also love to combine Applied Design and Creative Drama in an effort to integrate

the field of theatre in a more comprehensive manner. In addition, I'd be fascinated to teach the same curriculum in several different classrooms, to explore how the lessons function in a variety of classroom communities. A broader range of students and classroom environments might reveal new things about the discovery teaching methodology.

In this study, I observed students who became excited about learning. What is more gratifying to an educator? This is what makes me excited about the possibility of future study. Their desire to learn made me want to learn more myself.

In addition, I saw students who struggle with traditional learning tasks become excited about learning. In Applied Design (and I believe the same is true for Creative Drama), students are given learning processes that allow them to create meaning for themselves and communicate it—regardless of their reading and writing abilities. While these fundamental skills are vital, when students struggle with them, it often holds them back from being able to learn anything else. I was deeply touched to see that the discovery lessons helped foster a sense of confidence and curiosity in these students.

Although these discoveries don't directly relate to my guiding research questions for this study, they do impress upon me the feeling that it is vital to continue exploring the use of theatre processes to teach core curriculum. Applied Design seems to have the potential to reach students who are missing out through traditional teaching methods. Perhaps future study could further explore this possibility. In addition, it may help other educators, parents, and administrators to understand and buy into the potential of the arts for all our young people. It feels like something worth pushing for.

## I Know I Learned Something

In my discussion of data collection, I mentioned that some of the prompts in my questionnaire produced responses that didn't relate to my research questions. For example, one of the items asked students to complete the following statement: "I know that I learned something when." I hoped that student responses would help me explore student understanding. Though their answers did not lead me in the direction I hoped, they fascinated me nonetheless. Students told me, "I know that I learned something when:"

- "My head jumps up!"
- "I "ooh" or "ahh" about something. Sometimes I "OH" about it too."
- "I'm active and want to answer anything about what I learned."

In their own poetic way, these students revealed my own learning process. My head "jumped up" so many times during this process. My experiences in Mrs. Z's classroom inspired future projects. I left the classroom each day wanting to tell everyone about my experiences with the students, and about how these experiences made me want to share Applied Design with many, many more students. In particular, I felt incredibly inspired as I watched the students move through moments of challenge to find discovery on the other side. I'm sure they have no idea that they provided me with the same opportunity.

There have been plenty of times during this process when I wasn't "oohing" or "ahhing." I struggled with the limitations of my study, and what these meant as I tried to articulate and justify my continuing interest in Applied Design as an exciting and sound teaching methodology. As I near the end of this process, I feel like I am finally ready to look back and say, "OH! That's

what I learned.” By documenting my work and examining it in a critical way, I forced myself to really think about my process and its effects on the students. I pushed beyond simply trusting my gut and worked to really unpack what I saw in the classroom around me.

Oddly enough, moving through this careful analysis has made me trust my instincts all the more, because I now believe I have reason to do so. The process of analyzing myself and my students in the moment has become easier for me. Taking the time to examine each observation at length has made me more objective about my work, even while I am in the middle of teaching. I realized that before I took that time, much of my self-assessment was rooted in doubt and self-consciousness. Now, I feel like I am better able to both articulate my objectives, work to achieve them, and share my process with others. By taking the time to really consider what it means to engage my students and how to assess their understanding, I have a better sense of how to measure both my own goals and student outcomes.

I find that as excited as I am to share the results of my study, and to develop future exploration into Applied Design, the reaction I’m most excited about is my own. I feel more ready than ever to move forward: as a teaching artist, as a researcher and as a student—always as a student. I hope I never see the day when my work doesn’t make my head “jump up,” and I look forward to where these leaps will take me.



## **APPENDIX A: STUDENT PRE-STUDY QUESTIONNAIRE**

## Pre-Study Student Questionnaire

Name \_\_\_\_\_

Finish the sentences. These sentences all ask you to talk about your time during Reading Block, with your "Imagine It!" book.

1. Some things I really **like** about Reading Block time are:

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2. Some things I **don't like** about Reading Block time are:

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3. I know that I **learned** something when:

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4. The activities that help me learn **best** in class are:

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5. My **favorite** reading lesson from last week was:

Because: \_\_\_\_\_

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6. A reading lesson I **didn't like** much was:

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Because: \_\_\_\_\_

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7. I think that **"theatrical design"** is:

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8. I think that using **"theatrical design"** to learn during reading block is:

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## **APPENDIX B: STUDENT POST-STUDY QUESTIONNAIRE**

## Post-Study Student Questionnaire

Name \_\_\_\_\_

Finish the sentences. These sentences all ask you to talk about your time during Reading Block, with your "Imagine It!" book.

1. Some things I really **like** about Reading Block time are:

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2. Some things I **don't like** about Reading Block time are:

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3. I know that I **learned** something when:

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4. The activities that help me learn **best** in class are:

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5. My **favorite** reading lesson from last week was:

Because: \_\_\_\_\_

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6. A reading lesson I **didn't like** much was:

---

Because: \_\_\_\_\_

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7. I think that "**theatrical design**" is:

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8. I think that using "**theatrical design**" to learn during reading block is: \_\_\_\_\_

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## **APPENDIX C: TEACHER PRE-STUDY QUESTIONNAIRE**

Pre-Study Teacher Questionnaire

Finish the following sentences. These sentences refer to the time you spend with you students in Reading Block, based on the Imagine It! book. Please use the additional pages if necessary.

1. My students learn best when:

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2. My students struggle with:

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3. I know my students are engaged when:

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4. I know my students have learned something when:

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Finish the following sentences. These sentences ask you to think about arts integration.

1. I think that arts integration is:

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2. When I think about arts integration in my classroom,  
I get excited about:

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I worry about:

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3. I think that "theatrical design" is:

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4. When I think about using "theatrical design" to help my students learn,  
I get excited about:

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I worry about:

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## **APPENDIX D: TEACHER POST-STUDY QUESTIONNAIRES**

Post-Study Teacher Questionnaire I

Finish the following sentences. These sentences refer to the time you observed Ms. Fuss working with the students in Reading Block, based on the Imagine It! book. Please use the additional pages if necessary.

5. I saw my students learn best when:

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6. I saw my students struggle with:

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7. I knew my students were engaged when:

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8. I knew my students learned something when:

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---

---

Finish the following sentences. These sentences ask you to think about arts integration.

5. I think that arts integration is:

---

---

---

6. When I think about arts integration in my classroom,

I get excited about:

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I worry about:

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7. I think that "theatrical design" is:

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8. When I think about using "theatrical design" to help my students learn,  
I get excited about:

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I worry about:

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## Post-Study Teacher Questionnaire II

Please respond to the following questions. All questions refer to material covered during Reading Block the week of December 8-12, 2008.

1. How did students achieve on written assessments last week (tests, worksheets, etc.)?
2. How did these achievements compare to previous weeks this year?
3. In what areas did you see students demonstrate clear understanding?
4. In what areas did you feel your students lacked understanding?
5. For each arts integration lesson you observed, please describe:
  - a. A success you saw (for yourself and/or a student).
  - b. A struggle you saw (for yourself and/or a student).

**APPENDIX E: IRB HUMAN SUBJECTS PERMISSION LETTER**



University of Central Florida Institutional Review Board  
Office of Research & Commercialization  
12201 Research Parkway, Suite 501  
Orlando, Florida 32826-3246  
Telephone: 407-823-2901, 407-882-2012 or 407-882-2276  
[www.research.ucf.edu/compliance/irb.html](http://www.research.ucf.edu/compliance/irb.html)

### Notice of Expedited Initial Review and Approval

From : **UCF Institutional Review Board**  
**FWA00000351, Exp. 10/8/11, IRB00001138**

To : **Alicia L. Fuss**

Date : **December 05, 2008**

IRB Number: **SBE-08-05937**

Study Title: **Creative Design: An exploration of arts integration through theatrical design in the 4th grade classroom.**

Dear Researcher:

Your research protocol noted above was approved by **expedited** review by the UCF IRB Vice-chair on 12/5/2008. **The expiration date is 12/4/2009.** Your study was determined to be minimal risk for human subjects and expeditable per federal regulations, 45 CFR 46.110. The categories for which this study qualifies as expeditable research are as follows:

6. Collection of data from voice, video, digital, or image recordings made for research purposes.
7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

The IRB has approved a **consent procedure which requires participants to sign consent forms.** Use of the approved, stamped consent document(s) is required. Only approved investigators (or other approved key study personnel) may solicit consent for research participation. Subjects or their representatives must receive a copy of the consent form(s).

All data, which may include signed consent form documents, must be retained in a locked file cabinet for a minimum of three years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained on a password-protected computer if electronic information is used. Additional requirements may be imposed by your funding agency, your department, or other entities. Access to data is limited to authorized individuals listed as key study personnel.

To continue this research beyond the expiration date, a Continuing Review Form must be submitted 2 – 4 weeks prior to the expiration date. Advise the IRB if you receive a subpoena for the release of this information, or if a breach of confidentiality occurs. Also report any unanticipated problems or serious adverse events (within 5 working days). Do not make changes to the protocol methodology or consent form before obtaining IRB approval. Changes can be submitted for IRB review using the Addendum/Modification Request Form. An Addendum/Modification Request Form **cannot** be used to extend the approval period of a study. All forms may be completed and submitted online at <http://iris.research.ucf.edu>.

**Failure to provide a continuing review report could lead to study suspension, a loss of funding and/or publication possibilities, or reporting of noncompliance to sponsors or funding agencies.** The IRB maintains the authority under 45 CFR 46.110(e) to observe or have a third party observe the consent process and the research.

On behalf of Tracy Dietz, Ph.D., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 12/05/2008 12:28:30 PM EST

IRB Coordinator



## LIST OF REFERENCES

- Cohen, Louis, Lawrence Manion, and Keith Morrison. Research Methods in Education. New York: RoutledgeFalmer, 2000.
- Fuss, Alicia. Written journal, Dec. 2008.
- Lighting Design Worksheet. Written class work, Dec. 2008.
- Newman, Fred M., Helen Ms. Marks, and Adam Gamoran. "Authentic Pedagogy: Standards That Boost Student Performance." Issues in restructuring schools 8 (1995): 1-16.
- Scenic Design Worksheet. Written class work, Dec. 2008.
- Student Pre-Study Questionnaire. Written interview, Dec. 2008.
- Student Post-Study Questionnaire. Written interview, Dec. 2008.
- Teacher Pre-Study Questionnaire. Written interview, Dec. 2008.
- Teacher Post-Study Questionnaire I. Written interview, Dec. 2008.
- Teacher Post-Study Questionnaire II. Written interview, Dec. 2008.
- Vocabulary Mask Worksheet. Written class work, Dec. 2008.