LEARNING PRACTICES IN A MUSEUM ART STUDIO: DESIGNING A LEARNING FRAMEWORK FOR AN ARTS-BASED LEARNING TEAM

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This design case explores the design of a learning framework at a museum. Specifically, the case explores the development of learning practices (LPs) for an arts-based learning space and uses these practices to explain and design for learning and deepening engagement. These LPs represent a means for developing a common language across studio educators for the kinds of learning and engagement they sought to support in the museum Art Studio. This framework aligns with the mission and vision of the museum, and the development process helped form the team’s common language. In all, this work contributes to research on educator professional teams as well as works attempting to articulate what it means to engage in arts-based learning within a museum setting.

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INTRODUCTION

Prior educational research has noted the importance of collaborative teams to support educators’ practice (e.g., Ronfeldt et al., 2015). These groupings are often referred to as professional learning communities or work circles (e.g., Wardrip et al., 2015a). One key component of these collaborative groups of educators is the importance for members to develop a common language for learning (Grossman et al., 2002). A common language can ensure that participants maintain a shared understanding across different domains or art media (Barley & Kunda, 2001). In educational settings, shared language is associated with collegiality, continuous improvement, and common goals (Horn & Little, 2010). Common goals can especially be a challenge for museum arts education programs that work across media with Teaching Artists with different levels of experience and expertise.

Informal art education experiences offer unique opportunities to engage with the discipline of art and provide some specific, sometimes unique, opportunities for learning. In contrast with school-based art classes, art education in a museum studio is voluntary, ungraded, multi-age, and less restricted by time. While there are established frameworks (Hetland et al., 2007) and school based-standards that underscore the importance of creating and observing art, we sought an appropriate framework for our setting, a children’s museum art studio; an area in need of more research (Luke & Adams, 2008; Luke & Knutson, 2010).

This design case is part of a larger program of work within an interactive children’s museum in the United States to address these two issues: supporting the development of a common language for learning among teaching artists (TA) through the design of a learning framework. In doing so, the team of TAs sought to identify learning practices (LPs) in their arts-based learning space, and use these practices to talk about and design learning experiences in the studio. The LPs are generated from two questions that together structure the iterative design-based improvement model (Wardrip et al., 2019) behind this work: What do we value about learning...
experiences in the Studio? What do we design to support engagement in these experiences? These LPs represent a means for developing a common language across studio educators for the kinds of learning and engaging they sought to support in the museum Art Studio (the Studio).

In the next section, we position this work within the field of arts-based learning in museums. Then, we demonstrate how the development of LPs builds upon previous work and represents a trajectory of building a vision for learning more broadly within a museum. Next, we will detail the development of the LPs for the Studio as part of a collaborative process between researchers and educators. Finally, we will provide a brief description of each studio learning practice that was developed.

BACKGROUND ON ARTS-BASED LEARNING

The goal of this work was to develop a common language for learning in the Studio by building a useful framework to articulate the vision for learning. This vision would work in tandem with (and hopefully make coherent) specific themes or exhibits that may come to the museum's art studio (Hubard, 2014). Due to the unresolved nature of what it means to learn in an art museum (Pringle, 2018; Pringle & DeWitt, 2014; Sayers, 2011; Eisner & Dobbs, 1988), the art corner of the informal learning field trails behind its disciplinary peers, like science (Tsiilar, 2017). The tension created by the strongholds of institutional authority and visitor needs influences the wide and varied spectrum of design stances of museums. Views and their accompanying educational practices can include the conviction that art should speak for itself (minimal labels), or the prescribed curatorial voice of authority (Eisner & Dobbs, 1988). In addition, contrasting perspectives might suggest the use of supportive labels and hands-on interpretive devices within, as well as outside of galleries, (Knutson & Crowley, 2010), facilitated experiences or tours (Folk, 2007; Burnham & Kai-Kee, 2007), and the "anything goes” notion that visitors will make or find meaning within the art either independently or in social groups (Housen, 2007; Stainton, 2002).

Lacking a unified framework of understanding, most museums still rely on their school-based counterparts for theoretical and practical disciplinary guidance. Some research has sought to identify mediating processes to describe learning in museums more generally (Palau-Pellicer, Mena & Egas, 2019) or elements more specific like inspiration (Ishiguro & Okada, 2018) or interpretation (Lenz Kothe, 2016). Yet, as for theoretical frameworks for designing visitor learning and engagement, most museums take theirs from that of school-based art education (Ebitz, 2008). These frameworks often reflect the dichotomized paradigms of art as a vehicle for creativity, personal self-expression, and self-discovery (Housen, 2007), and that of a formalized, sequential approach to learning the “disciplines” of art (Dobbs, 2004).

While the former places the learner at the center of the experience, the latter replaces the learner with the content of art, focusing on competence within the disciplines of art making, art criticism, art history, and aesthetics (Dobbs, 2004; Knutson & Crowley, 2010). Thus, the museum staff could not simply take a framework used elsewhere and apply it to their own context.

LEARNING PRACTICES (LPS) IN MUSEUMS

Over the years, the museum has evolved an approach to identifying, describing, and evaluating learning in and through designed museum experiences. Design researchers and practitioners work collaboratively to empirically identify LPs, or observable and/or reportable evidence of learners’ engagement in an identified learning context (Wardrip & Brahms, 2015b). These LPs are based on what the Teaching Artists (TA) value for learning and engagement. (Wardrip et al., 2018; Wardrip et al., 2021). These learning activities are often referred to as overt (Menekse et al., 2013; Chi & Wylie, 2014). These overt learning activities are “visible, can be elicited and manipulated by the instructor or designer of a learning environment, can be assessed in terms of their frequency of occurrences, and can be coded in a variety of ways and analyzed as evidence of mediators of learning” (Chi, 2009, p. 76). In other words, it is a way one may aspire for visitors to talk, work, and participate in the space. This work began with the identification of LPs in the museum’s makerspace for children and families (Brahms & Wardrip, 2014; Wardrip & Brahms, 2015b, Brahms & Wardrip, 2016). The development of the Studio LPs both derived from and further evolved this line of practice-based research.

Using an iterative design-based improvement model (Wardrip et al., 2019), the research-practice team focused on the actions and interactions of learners as they engage in learning processes, rather than on the end results of their experience. Educators and designers used this approach to continually and collaboratively create, debate, and modify learning experiences to better support engagement and growth for children and families in empirically derived LPs.

DESIGN APPROACH

This design work was guided by questions that together structure an iterative design-based improvement model:

- What do we value about learning experiences in the Studio?
- What do we design to support engagement in these experiences?

To address these questions, we engaged in a participatory process that included designing, documentation, and discussion. Taking place within the Studio, the team involved three researchers and three teaching artists. The team met weekly (see Figure 1). The Studio is an art-making space in
a children's museum that offered different opportunities to engage in art-making around the space, such as working with clay, print-making, painting, and drawing. Some art-making activities were consistently facilitated and some rotated out on a weekly basis. The Studio usually has 2-4 teaching artists in the space to assist and guide families. The work represented a research-practice partnership within the museum that, more generally, sought mutual benefit and mutual responsibility in the research projects of the museum. We describe this process and the setting in more detail in the next section.

THE PROCESS OF IDENTIFYING AND DESCRIBING LEARNING

The approach we used to develop the Studio LPs in the studio as a reflective tool for evaluation and design has become a valued approach to professional development for museum staff. The design process included asking the team to identify and refine a shared understanding of what the team members value for learning and engagement and what it looks like for visitors to engage in the learning values.

We began this process through a series of discussions between researchers and the Studio TAs centered on specific activities in the Studio. The team met weekly with as many as three researchers and three TAs participating. This phase of the work is seen in Figure 2 as Experience-Based Discussions. Cycling through each of the commonly offered activities, such as easel painting, clay exploration, and silkscreen printing, we had deep discussions about what the TAs valued about learning experiences in the Studio and how their designs might support engagement in these experiences. In our meetings, we addressed these questions and probed each other’s responses through conversation. For example, when we discussed what the TAs valued about screen printing, the TAs generated a list. This list included:

- Real artist practice.
- Real materials.
- A memorable favorite for returners.
- It’s wet, messy, “fine” art.
- Very strong printing community in (our city).
- Uses art materials/language.
- Gives visitors control of the outcome of their piece.

What we see in the list are the early beginnings of the LPs from the Studio. For example, “messy,” and visitors having control over what they make are examples of this. As previously mentioned, LPs focus on what we want learners to be doing in the learning experience. Getting messy or being messy can serve as a starting point, for example, for us to discuss what we mean by “messy” and what is it that we want learners to be doing when they get messy.

Once we discussed these core art activities of the Studio, we discussed them together to compare and contrast what these activities offered for visitors. In discussing the activities, an early theme showed that the TAs valued choice-making by the learners. In these activities, it was noted by the TAs that the learners had creative control over what they made and how they made it. While choice-making was not ultimately identified as an LP, it served as a starting point to find commonality across what these art activities were supporting.

Much of what the TAs described through these discussion sessions about the valued qualities of designed experience, focused on the design itself, or aspects of the experience that the staff facilitated, created, or provided, rather than on the observable behaviors of the young learners. For example, the TAs spoke about giving children opportunities to get messy through their art-making rather than defining what messy behavior looked like. Therefore, we engaged in a process of developing, defining, and refining our collective understanding of the LPs to identify the observable learner behaviors associated with each learning practice.

In between the weekly meetings, the TAs carried out observations in the studio or reflections on a program they facilitated to consider the ways in which the practices were evident or not and what constituted evidence for the practices. Meanwhile, the design researchers revised the practices and/or descriptions of the practices based on our collective discussions. Each revision was shared with the TAs and critiqued to ensure that the revision distilled the spirit of what the TAs were aiming for. Through these efforts, various practices were collapsed, modified, or emerged and language was changed to reflect the realities of the context. Terms such as “playfully exploring,” and “messing around” were used in cycles of revisions when trying to preserve the
Eventually, the LP became material play. In Figure 2, we lay out a model of our process. The experience-based discussion happened first. Once the experience-based discussions were concluded, the identification of practices and the revisions occurred in a recursive fashion. This process was important to both capture what the TAs viewed as important kinds of engagement in the studio and also ensure that we could see or make visible that engagement. Once we had a set of LPs that we all felt comfortable and confident with, the TAs began to conduct design experiments to explore the characteristics of the LPs.

The design experiment process (see Figure 3) primarily involves designing and prototyping experiences to support evidence of engagement in the LPs. This includes exploring a hunch or conjecture by making a change to an aspect of practice (what we called a tweak) such as space, an activity, an exhibit component, a facilitation strategy, or a method of communication, collecting evidence of learners’ engagement in the focal-practice, and then making further changes to the design, based on what was learned. Patterned after “teaching experiments”, these served as opportunities for TAs to make conjectures for fostering learning through art making and then testing them out. This kind of design study is a particularly effective strategy for developing innovative teaching and learning models.

Each TA chose a different learning practice as a lens through which to design and redesign the experience to better support evidence of learner engagement in that identified practice. The TAs tested their learning practice by designing for engagement in the practice and collected data such as observing learners and collecting learners’ work products. TAs learned that collecting more data, such as detailed notes or different sources of data, provided opportunities for more discussion around what engagement in the LPs looked like. Then the TAs would reflect on what they saw from the learners. Collectively we would discuss what they tested and how they made sense of it. These evolving designs and observations of engagement offered chances for feedback and further modified their designs to enhance learner engagement.

We scaffolded this process using a graphic organizer to document the conjectures. In Figure 4, we can see an example of one. The TA is focused on developing craft as a learning practice and makes this more concrete by focusing on color mixing as an example of a craft. The simple tweak that the
TA makes is providing palettes of paints with different colors (see Figure 5). Then the TA provided three conjectures of what she might look for while children and families were engaging with the paint. This document gave the group an opportunity to discuss the gap between what they expected would happen and what actually happened. In the case of color-mixing, the TA followed with additional tweaks, such as providing color-mixing "recipe cards" to offer guidance to the children as well as providing test paper so that children could try out the mixing without damaging their main work.

LEARNING PRACTICES OF THE STUDIO

In this section, we describe each learning practice as it relates to learners' participation in various art-making experiences in the Studio. The examples depicted come from data collected from observations of visitors' engagement through researcher and practitioner observations using photos, video, and field notes.

Through the design of all learning experiences in the Studio, the teaching artists aim to nurture each child to express their own voice and vision through the art-making process, while situated within a social learning environment. This means creating experiences where learners are supported to wrestle with and represent personal interpretations, ideas, and understanding; play with their own thinking processes, methods of problem-solving and meaning-making; and discover and express their own interests, inquiries, and intentions through engagement with and exploration of artistic mediums, movements, and materials; the “real stuff” of art-making. It is through the learner’s engagement in the following LPs of the Studio, that we see this expression of voice and vision, take shape.

Material Play: Learners experiment with the properties and perceived boundaries of a material, tool, or concept through sensory exploration.

Although many of the activities and experiences of the Studio support material play, one example is children’s participation in light play, seen in figure 6. Designed with a simple screen and light source, such as a sheet draped across two poles and an overhead projector, through light play children may use their bodies to experiment with elements of shadow and color, like depth of field, opacity, color theory, and shape, line, and figure. Evidence of children’s engagement in material play can be seen and heard as they work in pairs or small groups, on either side of the screen, encouraging one another to manipulate elements of the experience, such as their own bodies or provided materials, like color gels or filters and prisms: “move backwards, now move forwards;” “If you stand on the other side, you can see

FIGURE 5. Palettes of paints.

<table>
<thead>
<tr>
<th>LEARNING PRACTICE</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>Express Voice &amp; Vision</td>
<td>Learners express their personal voice and vision through participation in these learning practices of the art studio.</td>
</tr>
<tr>
<td>Material Play</td>
<td>Learners experiment with the properties and perceived boundaries of a material, tool, or concept through sensory exploration.</td>
</tr>
<tr>
<td>Develop Craft</td>
<td>Learners demonstrate increasing comfort, confidence, and skillful use of materials, tools, and techniques.</td>
</tr>
<tr>
<td>Notice</td>
<td>Learners use their senses and personal experience to observe and describe the world around them.</td>
</tr>
<tr>
<td>Wonder</td>
<td>Learners ask questions and discover new problems to solve by engaging in the art-making process.</td>
</tr>
<tr>
<td>Revise</td>
<td>Learners make intentional choices and changes to their artwork and/or art-making process.</td>
</tr>
<tr>
<td>Contextualize</td>
<td>Learners refer to the local and global communities that surround and influence their own art-making during their art-making experiences.</td>
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TABLE 1. Learning practices of the Art Studio. Express Voice & Vision.
Develop Craft: Learners develop comfort, confidence, and skillful use of materials, tools, and techniques.

Based on the Museum's "Real Stuff" philosophy, visitors may engage with real ceramic clay in a variety of ways that facilitate the development of craft. The most recognized ways are through opportunities for free exploration and hand-building with wet clay. Visitors work with a lump of clay using their hands, as well as a variety of traditional and non-traditional tools such as clay shapers and sculpting tools, rolling pins, and objects that create texture; and opportunities for throwing clay on the potter's wheel. Evidence of learners' development of craft can be seen progressively with the material of clay; beginning with material play, where they may explore the properties of the material by rolling it out into snakes or pancakes, making indentations or marks using their fingers or tools. Through material exploration, learners may begin to feel more comfortable with the material of clay, creating intentional forms. From here, learners can learn to employ different techniques such as forming pot through pinching, coils, or slabs; scoring and applying slip to join pieces of clay using specific tools. Additionally, many take the next step and try their hand at the potter's wheel, shaping pots and improving their technique with a TA.

Notice: Learners use their senses and personal experience to observe and describe the world around them.

As a learning practice, noticing is the learners' ability to look or perceive closely and to express what they see or feel, creating a visual language for them. Through participation, learners develop awareness about, a relationship to, language for, and new perspectives on their context—the details such as line, shape, and color, and the whole that they make up.

Evidence of noticing can be seen and heard through many activities in the Studio, as learners are encouraged to notice the qualities of the context. One example of this is children's perception of More Light, a large-scale installation by the artist made from flagging tape, paperclips, tape, and steel cable that fills the rotunda ceiling of the Studio, which was once an old post office. The artist said of their work, "My work responds to environment through the exploration of form and space through color, light and spatial structure; incorporating the object in space and space as object dyad..." School groups are often gathered in the center of the studio and invited to "look up" at the dynamic sculpture. When asked what they notice about the piece, children seem to effortlessly discern the artist's intention, as they respond, "the colors of pink and orange," "streamers," "pattern," and "the sun coming through the windows." On one occasion, a kindergartner raised their hand and said, "it must be called that because I notice that it is more light than heavy," discerning their own visual language and understanding of the piece in relationship to its environment.

Wonder: Learners are inspired to ask questions and discover new problems to solve by engaging in the art-making process.

When learners engage in wondering, they ask questions, begin a creative line of inquiry or intention, and discover new problems to solve by engaging with the methods, makers, and artifacts of the artistic process. Through participation, learners dwell within their curiosity, look inward at their own feelings and experiences, as well as outward, using inspiration from others, to draw inferences and make meaning. In essence, wonder as a learning practice is about the act of interpretation, or making meaning from the noticed elements of the context.

Story Time, a weekly program offered in the Studio, provides a distinctive context for evidencing children's participation in the learning practice of wonder. During story time, seen in Figure 7, a TA chooses a collection of picture books that share a common theme, whether that be a common message, common character, or similar illustration technique. Families gather in a cozy spot in the Studio. While reading, the TA periodically pauses to provoke learners' reflections, or wondering about elements of the story, such as a character's feelings, and how those elements relate to each of the learners; "How would that make you feel?" Often, these wondering discussions will be based on the visual cues of.
the book, such as “How do you know that this person is sad?” Children share their interpretations of these qualities, such as the way a color makes them feel, or how an illustration technique makes the story seem more realistic, whimsical, or silly. These visual investigations are carried across books within a single session. At the end of each story, children can also be given the opportunity to wonder what will happen next, for a particular character, plot, or other aspect of a story. These wonderings about what will happen next can serve as a starting point for an art-making process to represent that next step in the story.

*Revise*: Learners make intentional choices and changes to their artwork and/or art-making process.

*Silkscreen printing* is an activity in the Studio that has been designed, and redesigned, to support revision. A staple of the Studio, learners begin their silkscreen process by cutting out shapes, forms, and letters from newsprint. These shapes are laid on a piece of paper and placed on a printing bed. A screen is lowered onto the arrangement, and ink is squeezed and pressed, or pulled across the surface of the screen. As the screen is raised and the paper is removed, a design is created whereby the ink covers all parts of the paper not covered by newsprint (see Figure 8). Each step in this process offers opportunities for children to revise aspects of their artwork: As they are creating their initial design with cut-out shapes of newsprint, they may rearrange them based on their developing understanding of negative and positive space; they may choose a different color paper or ink to achieve the desired contrast; or they may add layers of design, printing one on top of the other, to reveal unique color combinations, mixings, patterns, and forms.

*Contextualize*: Learners develop an awareness of the local and global communities that surround and influence their own art-making.

Contextualization is about putting one’s personal art-making process into conversation with historical and contemporary art-making customs and practices, as well as when they express personal identity as an artist or with the art-making process. A common way that we encourage contextualizing is by showcasing the work of living and past artists. This happens through artist residencies, where an artist will engage visitors in an aspect of their process through programs, as well as by highlighting the work and process of a specific artist or artistic movement. One recent example of this from the Studio is through the combined display and programming related to artist, Judith Scott. Scott (1943-2005) was an artist born with Down Syndrome and was Deaf. Their work combined a structural base made from found materials wrapped and tied in layers of carefully selected colored cloths and yarns. Lacking oral language, Scott spoke to the world through sculptures, which seem to reflect the colorful, tactile world of their childhood. The display and associated program in the Studio, featured photos and text panels about the artist’s life and work, opportunities to contribute to a collection of large wrapped sculptures, as well as a series of sculptures made by visitors hung for inspiration. This visually and physically engaging experience enabled caregivers to learn more about a little-known, yet highly influential artist of the 20th century, and to use Scott’s work as a source of inspiration for engagement in an art-making process similar to their own. From this combined display and program, conversations unfold between children, caregivers, and TAs, each using a different element of the experience (background knowledge, displayed text, or active process) to relate the artistic process to one’s own engagement.

**WHAT WE LEARNED**

In this design case, we shared the approach and output of researchers and practitioners collaboratively developing a learning framework in a children’s museum art studio. Through this work, we instantiated an iterative process for defining learning in arts-based spaces as well as a set of LPs salient for one group of TAs. Ultimately, this process and work have served several purposes.
First, this experience suggests that the process of learning practice development can support ambitious learning experiences in other museums. While these LPs encapsulate the Studio team’s priorities for learning, these might not be the priorities of other museum-based studios. In other words, we do not assume that other museums would value the same LPs, the framework introduced can serve as a starting point for them. In Figure 1, we presented the process through which we defined our studio LPs including questions we asked at each step. In Figure 2, we offered the design experiment cycle that we refined through this project. Both the process of identification and refinement of LPs as well as design experiments could be leveraged by other museum educators based on their museums’ values and practices.

Second, the project has enabled the research-practice team to collectively identify the LPs for the Studio. This prioritizes certain types of learner engagement. It also provides a common language with which to talk about and reflect on learning designs in the studio. The TAs not only use this language together but also when communicating with caregivers or teachers visiting the museum. Moreover, the Studio team now has their own process, design experiments, for continuously improving and reflecting on their work. Finally, as was found in previous work (Wardrip & Brahms, 2016), this process has enabled the Studio team to close gaps between desired learning behaviors and current museum practice and to point towards elements of design that best support learners’ engagement in the identified practices. Through this work, we have established a common and contextual language for learning that is shared across research and practice.

Whether a TA adapts the framework or engages in the process of developing their own learning framework, this work has several implications. For example, we are positioning the TAs as builders of their own framework and decision-makers of what constitutes evidence of engagement in their chosen practices. This presents a tension between the practicality of local theory development, which they are engaged in and the extent to which the framework they design is generalizable or applicable to other settings. In the future, we may attempt to explore the gap that exists between the local theory development that comes from building a framework and a “middle range theory” that might be applicable outside of one’s specific context. Nevertheless, the development of the framework creates the opportunity for TAs to constantly refine their practice since they can look at the relationship between the goals of their design and the engagement they see from learners. Through this, testing their theory or framework is ongoing allowing TAs to continually reason about their practice.

Finally, this process has enabled our museum staff to work across departments. Specifically, in the museum’s broader efforts to support the partnership of research and practice, this process provided researchers and practitioners with the equal ground to contribute to what we know about learning and engagement in the Studio. Together, the team has generated new understanding as we have considered the ways in which our designs align with or challenge our assumptions about and aspirations for learner engagement. This approach of co-developing a framework for learning that is based on research of the learning sciences yet grounded in TAs’ lived understanding as facilitators and designers of art-making experiences have empowered and united the staff to discuss and assess their designs for learning. However, it should be pointed out that the involvement of TAs working with researchers meant that their jobs needed to be redefined. For instance, museum management needed to recognize the meetings and the TA’s prep for the meetings as part of the TAs work. While museum management did indeed recognize this, it did take some time for the new rhythm of the TAs work to fit within the museum’s scheduling process.

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REFERENCES


