Cultivating Creativity: Understanding Visitor Perceptions of Creativity in Art Museum Exhibits

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Abstract

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Over the decades, American formal education has prioritized benchmarks and standardized testing as indicators of learning, resulting in a population that struggles to think creatively in the workforce and as engaged citizens. Governmental agencies such as the Institute of Museum and Library Services, National Education Association, and National Endowment for the Arts have identified creativity and creative thinking skill development as core components of student success later in life. To address the need for creative thinkers at any age, art museums have begun to consider ways to foster creativity in all of their visitors. This study examined visitor perceptions regarding creativity and its role in the art museum. The researcher interviewed 52 adult visitors after their gallery experiences in three art museums that identify creativity as central to their educational mission. Results showed that visitors define creativity broadly, and consider aspects of creative thinking to be extremely valuable to their personal art museum experiences. Visitors particularly value imagination and curiosity, making connections, and considering new or different perspectives in their exhibit experiences. These findings may be useful to museum professionals as they consider visitor engagement in gallery spaces, as well as researchers interested in creative thinking in informal learning spaces.

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Chapter 1: Introduction

> Ordinary creativity has vast importance that must be recognized if we want to pursue a national agenda of creative development that touches all and benefits society broadly.
> – James S. Catterall, *The Creativity Playbook*

The ability to think creatively is not only valued across disciplines, but also considered critical for societal economic success. Googling "Why is creative thinking important now?" produces over 10 million results that range from the business sector, to pedagogy and the American education system, to creative thinking in the individual. But in 2010, Bronson and Merryman (2010) discovered American youth were scoring lower than previous generations on creativity tests, which measure divergent thinking and problem solving, despite a growing need for creative thinkers in increasingly intellectually demanding occupations. Since then, articles advocating for the value of creative thinking in today's society, and hypothesizing how to best foster creative thinking at work and at home, have been featured in periodicals from *Psychology Today* and *Scientific American* to *Parenting Magazine*, *Slate Magazine*, and the *Huffington Post* (Batey, 2011; Miranda, 2012; Scientific American, 2014; Smirniotopoulos, 2012; Weiner, 2016).

In an effort to support the growing need for intellectually flexible, innovative, and out of the box thinkers in today's society, funders such as the Institute for Museum and Library Services (IMLS) are supporting research and projects that promote critical thinking, creativity, and other 21st century skills (Institute of Museum and Library Services, 2009). Additionally, the National Education Association has identified 4 critical components for students to succeed in the 21st century, including critical thinking, communication, collaboration, and creativity and innovation (National Education Association, n.d.). In the 21st century, these 4 Cs are equally important to educational success as reading, writing, and arithmetic, the traditional 3 Rs of formal schooling. In November 2016, as part of their 50th anniversary leadership initiative,

Creativity Connects, the National Endowment for the Arts held a nationwide convening of more than 200 artists, arts leaders, and other creative thinkers to identify and champion the importance of creative thinkers in 21st century society (National Endowment for the Arts, 2016).

Exploration of creativity appears to be experiencing a renaissance of sorts, with dozens of publications across disciplines addressing new types and definitions of creativity or revisiting older creativity theorists and assessing their ideas in the context of 21st century society (Catterall, 2015; Kaufman & Sternberg, 2010; Runco & Acar, 2012). While the topic of creativity and creative thinking is booming, the majority of research focuses on promoting creative thinking in children in formal learning environments. This is perhaps in part due to the resounding cry for American educational reform that diminishes emphasis on standardized testing and curriculum requirements reinforcing 20th century education models of knowledge acquisition instead of teaching students how to think critically and creatively (Bronson & Merryman, 2010; Institute of Museum and Library Services, 2009; National Education Association, n.d.).

However, while advocating for creativity in schools is a worthwhile ambition, given the slow pace of change in America's monolithic public education system, other, more nimble sectors may be able to promote creative thinking impacts more quickly, effectively, and for broader audiences. By focusing exclusively on school-age children, individuals who are not in school are left out of creative thinking discussion and research. Considering that the majority of an individual's learning throughout their life is done in out of school environments, there is a great deal of research still to be done promoting creativity for individuals of all ages in informal learning environments, specifically in museums.

In light of this, museums have begun to realize the role they can play in fostering creativity for all visitors, not just children. Many art museums in particular have identified

creative thinking or the creative process as an important aspect of some or all of their programming. Some art museums, most notably Denver Art Museum and Columbus Museum of Art, have conducted research and/or evaluation specifically tied to how they define and foster creative thinking. Others have not only explicitly identified creativity and/or creative thinking in their educational mission or vision but have also dedicated physical spaces to exploring and fostering creative thinking within their walls. Examples include Columbus Museum of Art's Center for Creativity, Baltimore Museum of Art's Center for Learning and Creativity, and Dallas Museum of Art's Center for Creative Connections.

Additionally, several museum practitioners and researchers have turned their interests to the creative process of museum workers, managing for creativity in the museum setting, or specific studies of how to promote creative thinking in gallery experiences (Campbell, 2016; Gutwill, 2008; Levinson, Caruso, McDermott-Lewis, Williams, Steffen, Nielsen, & Hanson, 2008; Mostov, 2014; Norris & Tisdale, 2013; Patel, Heath, Luff, Vorn Lehn, & Cleverly, 2016; Trinkley, 2014). While many art museums are laying claim to creativity and working to develop visitors' creative thinking, little is known about how art museum visitors consider creativity and creative thinking in the art museum setting, their perceptions about their creative thinking experiences in gallery settings, and whether or not they believe these experiences are a valuable or important part of their museum experience as a whole.

Purpose

The purpose of this study was to better understand visitors' perceptions of the role art museum exhibits can play in promoting and fostering creative thinking.

The following research questions guided this study:

1. How do adult art museum visitors define and differentiate creativity and creative thinking?

2. In what ways, and to what extent, do adult art museum visitors describe using their creative thinking skills during their exhibit experience?

3. In what ways, and to what extent, do adult visitors consider creative thinking as an important component of their art museum exhibit experience?

Significance

The results of this study may help museum professionals understand a more nuanced view of visitors' perceptions and values around 21st century skill development within the museum setting. By identifying audience perceptions, museum professionals may make more accurate connections between the role of the museum and their visitors' personal abilities and desires to think creatively. These findings may illuminate a more elusive component of visitor experience: one that is more internal and individual, rather than measurement of creative behaviors as outlined by external forces such as visitor outcomes. More broadly, these findings may spark ideas about transparency and clarity in communicating with visitors amongst museum professionals considering an ideological shift towards a truly visitor-oriented museum model.

Chapter Two: Literature Review

In order to better understand audience perceptions regarding the role of art museum exhibits in promoting and fostering creative thinking, a closer examination into a variety of relevant sources of literature is required. This research includes four main areas, which are reviewed in detail below: a) the evolving purpose of art museums; b) learning in the art museum; c) existing theories of creativity and creative thinking; and d) public perceptions of art museums. The following chapter will position the research in the literature in order to identify what is known and what is not known about this particular area of study.

Evolution of the Purpose of the American Art Museum

Before examining of how some art museums are beginning to adopt creative thinking skill development as fundamental to their educational missions, it is necessary to understand how the role of the American art museum has evolved over time. This section aims to briefly describe the historical role of art museums, their shift towards embracing educational benefits and visitor learning, and the more recent shift towards fostering creative thinking among other 21st century skills.

The early American art museum as a reverent place for preservation and research. Early American museums hark back to the traditional wunderkammer, translated wonder cabinets or cabinets of curiosities, which were popular in Europe with members of the upper class. These early museums were not categorized by discipline, so much as the private collector's personal tastes, and were accessible only to academics and members of a certain class. The advent of museums in America, such as Charles Willson Peale's museum which opened in 1786 in Philadelphia, were similarly comprehensive and arranged not according to traditional disciplines, such as science, natural history, and art, but arranged in order to create a sense of

awe and wonder of the natural world (Weil, 2002). Later museums of the 19th and 20th centuries were modeled on the great European museums, and were primarily seen as places for quiet contemplation, akin to a temple or sacred place, for the wealthy and academically inclined members of the public (Cameron, 1971; Dana, 1917; Low, 1942; Weil, 2002).

Museums in the 19th and early 20th century existed to serve two functions: collection and preservation of objects and artwork, and interpretation through research and display (Cameron, 1971; Colbert, 1961; Dana, 1917; Low, 1942; Parr, 1963; Weil, 2002). For early 20th century museums, education was synonymous with curatorial and academic research of the collections in private and displaying works from the collection in exhibitions for members of the public to admire and enjoy (Colbert, 1961; Parr, 1963). While interpretation was considered a purpose of art museums, it was overlooked as a means to bolster attendance, and thus, entrance fees, so that the museum could continue to support "the more exciting pleasures of collecting and exposition" (Colbert, 1961; Low, 1942, p. 26; Weil, 2002). The primary purpose was still collecting and preserving objects, and for a great deal of the 19th and 20th centuries, public access to museums and educational efforts were considered secondary, if considered a purpose at all.

In the 1940s, America experienced a huge expansion of museums around the country (Conn, 2010; Low, 1942; Weil, 2002). However, governmental funding did not match the exponential growth, and museums were forced to seek new sources of funding. By means of survival, museums began to consider how to attract a broader segment of the general public to the museum - namely through providing more interpretation and general education. Writing amidst the contentious debate and shift in purpose, Theodore Low (1942) was an early advocate for museums as places with a great potential for general public value. Low criticized museum professionals on both sides of the debate by saying,

"Perhaps the most devastating result of this conflict...has been that scholars have come to look with disdain on popular education and popular education has, in turn, come to decry the narrow-minded, haughtiness of the scholars. The fact is that both pursuits are just as lofty, just as rewarding, just as difficult, and both have distinct functions to perform" (p. 39).

While Low's sentiments were controversial at the time, the debate surrounding education as a primary purpose of museum practice would continue through the 20th century.

The rise of museum education in American art museums. Following WWII, and Theodore Low's (1942) appeal for education to be made a priority in museums equal to preservation and collections, museums began to evolve from being collections-focused to education-focused (Mayer, 2005; Weil, 2002). But the definition of education manifested quite differently from the 1950s and 60s through today. As museums began to explore what it means to embrace education, the pedagogical approaches employed in museum learning and teaching evolved as well. Steadily throughout the mid-late 20th century, museum education moved from a didactic and content-based banking style of teaching, to more emphasis on visual literacy and teaching learners how to "read" a work of art in the 70s, to emphasizing personal connections with artworks in the 80s, to eventually empowering museum visitors to construct their own meanings in the 1990s (Mayer, 1998; Mayer, 2005). Teaching became learning, and the emphasis shifted from the object to the learner.

This evolution was reinforced by the American Alliance of Museums (AAM) when they published *Museums for a New Century* and *Excellence and Equity: Education and the Public Dimension of Museums* in 1986 and 1992, respectively. These two documents solidified education as a primary purpose of all museums. While *Museums for a New Century* (1986) identified education as a primary function of museums, the 1992 policy statement, *Excellence and Equity: Education and the Public Dimension of Museums* outlined three new core

components of every museum along with 10 recommendations for museums to accomplish in order to meet these new compliance standards. In it, AAM identifies museum education as a function of museums that touches every aspect of the museum, from the front-line staff to the director and trustees, and argues that each museum's commitment to education and public service should be clearly articulated in their mission statement and evident in their activities (Hirzy, 1992). Defining education broadly and including activities such as "exploration, study, observation, critical thinking, contemplation, and dialogue," AAM and the museum field began to assert their role as places for lifelong learning for every individual, regardless of age, gender, race, or cultural background (p.7).

However, art museums especially have struggled with how to implement this edict (Williams, 1996). Dobbs and Eisner (1987) conducted a Getty-sponsored study of American art museums and found that in a survey of over three dozen art museum professionals, the field was still unable to define museum education and their specific goals and outcomes. In order to determine whether this had changed, the study was replicated four years following the release of *Excellence and Equity*. Williams (1996) discovered that in the years since, only three out of 23 responding museums had revised their missions to include educational public benefit. Further, despite AAM's recommendations of ways to prioritize education, art museums still struggled to define the educational value of their museum in specifics aside from being repositories of culture. But despite art museums' slower adoption of a broader understanding of education as a primary purpose of museums, the majority of art museums have since adopted education as a core tenant of the purpose of museums (Korn, 2007a; Mayer, 1998; Weil, 2002).

The rise of creative thinking skill development in American art museums. In the 21st century, pedagogical philosophy shifted towards cultivating skills and ways of thinking, rather

than memorizing facts. The National Education Association, the Institute of Museum and Library

Services, and the U.S. Department of Education have identified the need to promote a skill set

for success in the 21st century, including creativity and creative thinking, both in formal and

informal learning environments (Institute of Museum and Library Services, 2009; National

Education Association, n.d.; Plucker, Kaufman, & Beghetto, 2015).

In 2015, the National Art Education Association launched its first ever research study, a

multi-year effort led by Randi Korn & Associates to investigate five 21st century educational

benefits that art museums provide in their K-12 programming including: critical thinking,

creative thinking, sensorimotor and affective response, human connections and empathy, and

academic connections (Holtrop, 2017). Preliminary results point to 13 outcomes of art museum

programming, with creative thinking outcomes the second most cited (questioning and

investigation), ninth most cited (imagining and envisioning possibilities) and 11th most cited

outcomes (comfort with ambiguity and complexity) (Korn, 2015b). Within their school programs

at least, art museums are promoting creativity as a key component of how they contribute to

public service in their communities.

In winter of 2005, the *Journal of Museum Education* published an entire issue dedicated

to exploring creativity and thinking creatively in museum practice. Finnerty (2005) called for

museums to "affirm, legitimize, and validate new conceptions of creativity" (p. 13). Since then,

many art museums have incorporated creativity into their stated educational mission and vision

statements, website content, and program descriptions. However, very few institutions have

clearly articulated what creativity means for their institution.

Three exceptions include Denver Art Museum, Columbus Museum of Art, and Dallas

Museum of Art who have crafted institution-specific definitions, and published articles and

reports describing how they think about creativity (Fischer & Munley, 2014; Foley & Trinkley, 2014; Pitman & Hirzy, 2010). For these museums, creativity is defined as a process that involves various aspects of critical thinking and ideation. In museum practice, educators cultivate creative thinking skills by designing experiences that are participatory and social in nature, centering around visitor idea generation, and often involving hands-on manipulation and/or creation (Fischer & Munley, 2014; Levinson, Caruso, McDermott-Lewis, Williams, Steffen, Nielson, & Hanson, 2008; Mostov, 2014; Pitman & Hirzy, 2010; Trinkley, 2014). Despite increased focus on creativity and encouragement of creative thinking behaviors, very little research has been done that demonstrates the impacts of visitor creativity in art museums.

Learning in Art Museums

As the role of American art museums has shifted from a focus on preservation of collections towards emphasizing the learning benefits museums provide to their communities, art museums are beginning to investigate their roles in public education and learning. While considered to be an important aspect of many art museums beginning as early as the 1950s and 1960s, learning was thought to be an intrinsic part of museum experiences, rather than something to be documented and researched (Beer, 1987; Mayer, 1998). To visit an art museum was to admire works of art, learn facts about an artist or work of art, and have a cultural experience: all implicitly beneficial impacts. However, perhaps due to the rising age of accountability in the museum sector, art museums are beginning to investigate the kinds of learning occurring in their spaces and programs.

In 2009, the Institute of Museum and Library Services published a report urging museums and cultural institutions to shift educational philosophies from content knowledge to promoting thinking skills such as critical thinking, creativity, collaboration, cross-disciplinary

thinking, and various forms of literacy that would set people up for success in the 21st century (Institute of Museum and Library Services, 2009). The last decade and a half has given rise to more robust research that documents and explores learning in art museums. Most frequently, research centers on learning impacts for specific audiences: families and youth/school programs. Additionally, some research studies focus specifically on exploring critical thinking skill development in context of the art museum. The following section will examine the ways in which people learn in museums and major findings regarding specific museum audiences, then review the existing research surrounding critical and creative thinking.

Characterizing learning processes in museums. Learning in the museum environment differs from the ways in which people learn in formal settings. Before addressing specific research findings, it is necessary to address widely-accepted norms regarding how learning occurs in the museum. With the possible exception of school visits, museums are free-choice learning institutions in that not only is visitation freely chosen, but content and learning experiences are dictated by the motivations, interests, affects, and funds of knowledge of learners (Falk & Dierking, 2000; 2013). Museum learning may involve a cognitive interaction between objects and learners, but it is more broadly explained in a sociocultural context (Luke, Stein, Foutz, & Adams, 2007). A sociocultural perspective on museum learning incorporates the inherently social nature of learning, including the social component of meaning making in groups, while situating learning within the museum, its objects, and its constructed/curated narratives and histories.

Family learning in art museums. Research regarding the ways in which youth and families learn in art museums center around two general areas: 1. Describing the ways families learn together, and 2. Exploring the impacts of exhibit design that support family learning.

Across the literature, families are defined as intergenerational groups (Borun, 2008; Falk & Dierking, 2000; Knutson & Crowley, 2010). There is a growing movement among researchers to also identify other factors that make up families, such as shared personal connections and interaction within a unique community of practice, in addition to more traditional concepts of family such as blood relation or geographic location (Adams, Luke, & Ancelet, 2010; Borun, 2008). Nearly all research on family learning centers on the experiences families have as casual visitors, rather than in structured family programming. While there is a greater abundance of research on family learning in science museums, there is relatively little that exists that specifically examines family learning in art museums.

Families visit art museums for as many reasons as any other visiting group, but for families, enjoyment, spending time together/being social, and learning new things function as an interconnected group of motivations (Adams, et al., 2010). This is supported by studies that examine the ways families interact and engage in art museums. Families may experience exhibits with the whole group, or they may splinter off into subgroups, but family learning research shows that families engage in conversations together that build on the group's prior knowledge, experiences, and memories to contextualize objects (Borun, 2008; Falk & Dierking, 2000; Knutson & Crowley, 2010). Typically, members of the unit work together to construct meaning and make connections, regardless of age or experience. However, older family members may assume facilitator roles to guide younger members' learning.

In an effort to facilitate deeper engagement with families, researchers have explored various physical exhibit aspects that support family learning. Many science and children's museums have applied the family-friendly exhibit design characteristics findings from the 1998 Philadelphia/Camden Informal Science Education Collaborative study (PISEC) (Borun, 2008).

Many of the seven characteristics of family-friendly exhibit design (multi-sided; multi-user; accessible; multi-outcome; multi-modal; readable; and relevant) discovered in the PISEC study occur frequently in interactive family learning gallery spaces, which are more common to art museums (Adams, et al., 2010; Borun, 2008). These independent family galleries within art museums are a growing trend to address perceptions of art museums as places that are not family-friendly (Knutson & Crowley, 2010). Learning outcomes for these spaces most typically center around any combination of outcomes related to relationship-building, developing knowledge and/or skills, and changing attitudes and perceptions (Adams, et al., 2010). However, there is little clarity amongst both families and educators regarding specific outcomes and impacts for these spaces. More typically, they are places that are perceived to support outcomes ranging from fine motor skill development to creativity and imagination, that ultimately result in enjoyment and fun as fundamental aspects of how these spaces provide value to families visiting art museums. Regardless, aside from these investigations into interactive family galleries and studies that focus on family conversations, very little research exists that explores the impacts of family learning specifically in art museums. Instead, the majority of research focuses on the impacts of field trips and other school programming.

School group learning in art museums. For many American art museums, educational efforts are focused on developing strong school field trip programs. Due to their links to the formal school system, these programs' impacts are often thoroughly evaluated and researched in order to demonstrate the value of school visits to museums. Thus, there is a large quantity of existing research that investigates school group learning in art museums. Particularly with school group/youth programming, practitioners, evaluators, and researchers most commonly utilize the generic learning outcomes, developed by the Research Centre for Museums and Galleries at the

University of Leicester, to organize and identify types of learning (Hooper-Greenhill, Dodd, Phillips, O'Riain, Jones, & Woodward, 2004). Using a broad definition of what learning entails, the generic learning outcomes identify learning as occurring in five general realms: skills, knowledge & understanding, enjoyment, inspiration & creativity, attitudes & values, and activity, behavior & progression (Hooper-Greenhill, Dodd, Moussouri, Jones, Pickford, Herman, & Toon, 2003).

For many formal educators as well as museum practitioners, successful field trips instill attitudinal and emotional learning such as developing positive associations with art and art museums as well as developing student confidence and self-efficacy (Beer, 1987; DeWitt & Storksdieck, 2008; Henry, 1992; Kisida, Greene, & Bowen, 2014; Korn, 2015b). However, there is growing research on the effects art museum engagement has on cognitive skill development including critical thinking and forms of literacy (Bowen, Greene, & Kisida, 2014; Downey, Delamatre, & Jones, 2007; Burchenal & Grohe, 2008; Kisida, Bowen, & Greene, 2016; Korn, 2015a; Korn, 2007b; Wasserman, 2015).

Educators echoed the importance of museums' impact on critical thinking skills in a 2015 survey of art museum educators around the country. In the survey, 270 respondents, split representatively across the American Alliance of Museums' six geographical zones, identified various critical thinking skills as the most cited learning goals for their programming (Korn, 2015b). Three examples of critical thinking skills- observation skills, interpretation of visual images, and appreciation of multiple interpretations- were the first, fourth, and fifth most frequently identified learning impact for K-12 art museum programming. However, many art museums still struggle to identify the broad range of cognitive components that play into critical thinking (Luke, et al., 2007). Further, prior to 2007, there had been relatively no published

research that was conducted in a rigorous manner to test whether or not critical thinking skills are causally linked to art museum engagement (Bowen, et al., 2014; Burchenal & Grohe, 2008).

Critical thinking research in school visit programming. In 2003, the Isabella Stewart Gardner Museum received a 3-year grant from the U.S. Department of Education to investigate critical thinking skill development in their school partnership program, *Thinking Through Art* (Burchenal & Grohe, 2008). The program utilized Visual Thinking Strategies to engage with artwork over a series of 8 interventions or treatments per school year: four at the museum and four in the classroom. Researchers conducted a quasi-experimental study to identify and investigate specific critical thinking skills addressed by the program. A treatment group and a control group of students in grades three, four, and five were selected to participate in the study. Researchers looked for evidence of (Luke, et al., 2007) seven key habits of mind that make up critical thinking in the art museum: 1. Observing, 2. Interpreting, 3. Evaluating, 4. Associating, 5. Problem-finding, 6. Comparing, and 7. Flexible thinking. In the final year of the grant, researchers conducted a yearlong research study utilizing the finished rubric to analyze student observations and interviews. They found that students participating in *Thinking Through Art* were significantly more likely than the control group to engage in critical thinking when presented with a work of art.

As part of the same 2003 3-year grant from the Department of Education, the Guggenheim Museum conducted a quasi-experimental study of their 37-year-old artist-in-residence school-partnership program, *Learning Through Art*. Like the work done at the Isabella Stewart Gardner Museum, this study also sought to explore and measure students' development of various aspects of critical thinking skills as a result of their participation in the program (Downey, et al., 2007). For this study Randi Korn & Associates, along with Guggenheim staff,

developed their own outcome criteria for identifying, defining, and measuring critical thinking within the program: extended focus, hypothesizing, multiple interpretations, evidential reasoning, schema-building, and thorough description.

Four elementary schools in New York City with similar demographic distributions were selected to participate in the study as control (12 classrooms) and treatment (24 classrooms) schools (Downey, et al., 2007). Randi Korn & Associates utilized standardized questionnaires, and a priori rubrics to score 565 student interviews with and observations of Learning Through Art participating third graders over a two-year period. Statistical analyses determined that the program had positively impacted five out of six critical thinking outcomes for the program. Additionally, the researchers discovered that for those children who participated in the program, their critical thinking skills that were developed during the arts-based program also carried over into the language arts classroom.

These findings were supported by two studies conducted by University of Arkansas researchers at Crystal Bridges Museum of American Art (Bowen et al., 2014; Kisida et al., 2016). Building on the findings reported in the Isabella Stewart Gardner study, researchers conducted an experimental study to determine if student critical thinking skills were still impacted by single-visit field trip experiences. A randomized sample of over 8,000 3rd grade through 12th grade students were split into control and test groups via a lottery process. Test groups were given a facilitated tour of the museum and control students did not visit the museum at all. All students were given a survey, which included an essay prompt asking them to respond to an unfamiliar work of art. The essays were blindly coded utilizing the critical thinking checklist developed by Luke et. al (2007). The 2014 study asked students to respond to a representational work of art, while the 2016 study asked students to respond to an abstract work

of art. Across both studies, the University of Arkansas researchers were able to make statistically

significant causal links between facilitated field trips to the museum and students' critical

thinking skills, even weeks after their visit.

Given the reliability and validity of these studies examining critical thinking impacts

(Bowen, et al., 2014; Burchenal & Grohe, 2008; Downey, et al., 2007; Kisida, et al., 2016), it is

fair to say that student participation in art museum programming has the potential to positively

impact student critical thinking skill development. However, the majority of critical thinking

gains were documented in observation and interpretation skill building categories, which invokes

questions as to the ability of art museum programs to impact more complex critical thinking skill

development.

Absence of research exploring creativity and creative thinking in art museums.

Related to critical thinking, creativity, often appears in art museum missions as part of their

social value, yet very little research has been conducted to investigate their assumed impact. One

summative evaluation study conducted by Denver Art Museum examined how their visitors

understand creativity within the scope of a special museum-wide exhibition, *Spun,* in 2013

(Fischer & Munley, 2014). The 18-month study explored several aspects of creativity in the

museum, from how staff define creativity, to how visitors think about creativity and associate

creativity with the museum, resulting in applications to how practitioners plan experiences to

foster creativity within the museum.

While the Denver Art Museum team identified their working definition of creativity as "a

process that generates ideas or products that are both original and workable," they sought

understanding of visitor perceptions about creativity broadly, how the museum supports their

creativity, and the degree to which the museum itself is a creative space in their visitor onsite

interviews [sample: 38], focus groups [3 with 28 total participants], and online questionnaires [sample: 634] (Fischer & Munley, 2014, p. 11). They found that visitors to the *Spun* exhibit self-identified as creative individuals, that visitors had a broad definition of creativity that included art making as well as more cognitive creative processes, and that the museum was a place that fostered creativity in the Denver community through its exhibits and programs. Through conversations with visitors, Denver Art Museum was also able to identify specific environmental aspects that supported visitor creativity including: showcasing artists' processes, designing comfortable spaces, imbuing experiences with elements of surprise- either in one visit, or in repeat visitation, promoting different perspectives in exhibits, and creating opportunities for visitors to contribute and create.

This study is a promising first step to identifying and understanding creativity and creative engagement within art museums, however, the study focused on a heavily programmed year-long experience surrounding the exhibit, *Spun*, rather than visitors' everyday general experiences within the museum. Further, there is little analysis applying explicit aspects of the museum's definition of creativity to how visitors organically define creativity, resulting in little application outside the Denver Art Museum environment.

Reflecting upon the variety of ways museum practitioners define and measure critical thinking, as well as the few empirical research studies examining benefits of engaging with the arts, Kisida et al. (2016) offered this call for continued research:

> Advocates make numerous claims about the benefits of the arts and humanities—increased student engagement, increased social responsibility, *increased creativity* [emphasis added], increased empathy, and increased tolerance, to name a few. Such outcomes seem paramount and fundamental to the mission of education. Yet, surprisingly, few of these claims have been empirically examined with rigorous research designs (p. 184).

Critical thinking is a substantial component of creative thinking, however critical thinking is just one part of what it means to think creatively; creative thinking also requires imagination and curiosity to produce new and original ideas (Halpern, 2003). Denver Art Museum has made a significant contribution to understanding how visitors perceive creativity within a highly-planned and programmed exhibit experience (Fischer & Munley, 2014), yet very little research exists that tests whether or not art museum engagement actually impacts visitors' creative thinking skills in the same ways that critical thinking skills have been tested in art museums.

Understanding and Measuring Creativity and Creative Thinking

While the creative process has fascinated humans for centuries, dating as far as the Ancient Greeks, the topic of "creativity" has only been around for 140 years (Plucker, et al., 2015). Research exploring creativity and what it means to think creatively began in earnest after WWII, as America competed in the Space Race and in other scientific and technological advances. In order to understand how museums can promote and foster creativity and creative thinking, it is necessary to understand how researchers have defined and measured creativity and the creative process. The following section explores various definitions, magnitudes, and factors of creativity and creative thinking, as well as measurement and assessment methodologies.

Defining creativity. Defining creativity is a nuanced topic that many researchers have either dedicated their entire careers towards, or simply skirted by relying on implicit definitions and descriptions. Plucker, Beghetto, and Dow (2004) investigated this dichotomy in a study analyzing how researchers across fields define or do not define what creativity is in their research. Examining 90 recently published journal articles across creativity-centered journals (*Creativity Research Journal* and *Journal of Creative Behavior*) as well as across the business, education, and psychology fields, they found that only 34 (38%) out of 90 published articles

provided explicit definitions of creativity. Thirty-seven out of 90 relied on implicit definitions, while the remaining 19 provided no definition for creativity at all, despite their research centering on the topic.

However, among creativity researchers, defining creativity has been nearly universally agreed upon as products or ideas that are both novel (or original, or new) and useful (or appropriate, or effective, or valuable, or meaningful) (Catterall, 2015; Csikszentmihalyi, 2013; Guilford, 1950; Hennessey & Amabile, 2010; Mumford, Baughman, & Sager, 2003; Perry & Karpova, 2017; Piffer, 2012; Plucker, et al., 2004; Richards, 2007; Runco, 2003a; Runco & Jaeger, 2012; Stein, 1953; Sternberg, 2006; Torrance, 1963). Depending on who is being creative, novel and useful may mean novel and useful to society at large, or it may mean novel and useful for the individual. Theorists have distinguished between the creative efforts that result in eminent creativity that impacts a broader society in some way and the creative process that every individual engages in every day.

Resulting from their study exploring how researchers define creativity, Plucker et al. (2004) offered this definition: "Creativity is the interaction among *aptitude, process, and environment* by which an individual or group produces a *perceptible product* that is both *novel and useful* as defined within a *social context*" (p. 90). Aptitude refers to the personality characteristics, traits, and attitudes that support creative thinkers. Process centers around the cognitive operations that result in a creative idea or product. The environment consists of any surrounding constraints or forces that inhibit or promote creative idea development. These three factors work together to produce perceptible products, or ideas, behaviors, or products that are new or novel in some way and useful in that they serve some kind of purpose. After all these factors have been considered and weighed, the social context must be factored in to assess

whether creativity is occurring. They elaborate on its necessity by saying, "...all definitions of creativity imply the necessity of a social context because such a context is requisite for determining whether (and how) a person, action, or product will be defined or judged as creative" (p. 92). By factoring in social context, the everyday creative ideas are not judged against genius-level creative products. The creative products of a fourth grader may be different than those of a Nobel prizewinning physicist, but in context they remain creative. This distinction is especially important for learning scientists, who emphasize the potential for every person to be creative in their day-to-day life (Catterall, 2015; Runco, 2003a).

Categorizing creativity by magnitude. In an effort to provide context by distinguishing between genius-level and more everyday creative efforts, several researchers have theorized or adapted measures of magnitude for categorizing creative performance. From as early as the 1950s, creativity has been categorized in two dimensions, Big C Creativity, or eminent creativity, and little-c creativity, or everyday creativity (Csikszentmihalyi, 1988; 2013; Kozbelt, Beghetto, & Runco, 2010; Stein, 1953). By distinguishing between Big C and little c creativity, the creative efforts of the majority of individuals and groups of individuals are not compared to, or diminished by, eminent Creative thinkers. Most creativity researchers, as a result of this dichotomy, focus their work on one aspect of creative magnitude- Big C or little c.

Researchers such as Csikszentmihalyi (1988) and Stein (1953) focus their creativity research on Big C Creativity, which emphasizes that in order to be eminently Creative in a field, the creative idea or product must be judged to be meaningful, useful, and new by field-specific gatekeepers, and then accepted by the field into domain knowledge. In Csikszentmihalyi's (1988) systems model of creativity, Big-C creativity occurs from an interaction between the individual (who produces the idea or product), the field (social institutions that act as gatekeepers and judge

the creative product), and the domain (collection of knowledge preserved for the future).

Csikszentmihalyi (2013) stresses that in his systems model of creativity, Big-C Creative people

must change or transform their domain in some way. For his model of Big-C creativity, "...the

most important implication...is that the level of creativity in a given place at a given time does

not depend only on the amount of individual creativity. It depends just as much on how well

suited the respective domains and fields are to the recognition and diffusion of novel ideas" (p.

31). However, critics of Big-C creativity research state that focusing on eminent Creativity

reinforces stereotypes and myths about creativity (Plucker, et al., 2004). As a result, many more

researchers have turned their attention to understanding little-c creativity.

According to Big C/little c creativity, all creative efforts that are not genius-level are

considered little c creative efforts, which encompasses the vast majority of creative performance.

In order to categorize and distinguish different aspects of little c creativity, Kaufman and

Beghetto (2009) added two additional categorizations to the realm of little c creativity: mini-c

and pro-c. Mini-c refers to the more subjective, personal, or emotional moments of creativity that

are not measured with creativity assessments or judged to creative by peers. It is defined as a,

"novel and personally meaningful interpretation of experiences, actions, and events" (Kaufman

& Beghetto, 2009, p. 3). Pro-c, on the other hand, refers to those whose creative performances

are the result of their profession. This might include musicians, designers, scientists, or anyone

else whose profession consists of some kind of creative performance, but they are not considered

eminent. It should be noted that an individual may move throughout these categories throughout

their life, and also exist within multiple categories at any given time. For instance, a professional

musician may engage in little-c creativity by gardening, and mini-c creativity when observing a

work of art in a museum.

Everyday creativity. Little-c creativity is also known as everyday creativity since it engages every individual at some point or another. For this reason, many creativity researchers have spent their entire careers exploring everyday creativity. While creativity has been defined as products and ideas that are novel and useful or meaningful, creative thinking or being creative involves a set of interrelated factors or strands that work together to produce creative ideas and products (Rhodes, 1961; Runco & Acar, 2012). The study of Big C, or eminent creativity, focuses on the creative performance/product, however for everyday creativity researchers, identifying and measuring creative potential is much more useful for predicting future creative success (Guilford, 1966; Runco & Acar, 2012). Creative potential is defined as a "broad set of variables that participate in generating a creative product," which can more or less be sorted according to Rhodes' (1961) 4-P model of creativity: process [cognitive], person/personality, product, and press [environmental/social factors] (Piffer, 2012, p. 259). The following section will identify and describe the various factors that influence creativity and creative potential. Since identification of a creative product has already been thoroughly described, the following section will address the process [cognitive], person/personality, and press [environmental/social] factors that generate creative products.

Process factors: Intelligence and cognition. The main cognitive processes involved in creativity are divergent thinking, or ideation, and convergent thinking or evaluative thinking (Baer, 2003; Basadur, Runco, & Vega, 2000; Guilford, 1958; Torrance, 1963) Divergent thinking centers around the process of coming up with new ideas and includes fluency (number of ideas), flexibility (variety of ideas), and originality (uniqueness of ideas) (Guilford, 1950, 1966; Runco, 2003b, 2008; Torrance, 1963). Divergent thinking has historically been prioritized when identifying and assessing creativity, but convergent thinking or evaluative thinking is also

an integral cognitive component of creativity (Baer, 2003; Runco, 2003b). Convergent thinking

occurs separately from divergent thinking, and is the process of selecting the best solution to a

problem (Guilford, 1958; Torrance, 1963). However, more recently, creativity researchers are

abandoning the term convergent thinking for evaluative thinking in order to emphasize that

divergent thinking and evaluative thinking are not mutually exclusive (Baer, 2003; Basadur &

Hausdorf, 1996, Runco, 2008). Divergent-convergent creates a dichotomy of counterweights,

when in practice they work in tandem (Baer, 2003). Evaluative thinking is an umbrella term that

includes critical thinking skills as well as "valuative and appreciative consideration" (Runco,

2008, p. 94).

  In a study analyzing creative problem solving, Basadur et al. (2000) determined that

ideation and evaluation act as a two-step micro-process that occurs in every step of the problem-

solving cycle ("finding good problems, solving them, and implementing good solutions") (p. 78).

Rather than occurring simultaneously, they occur in two distinct steps to avoid premature idea

elimination. This micro-process not only occurs in traditional problem-solving, but all instances

of creative thought. Since creativity centers around complex information-processing skills to

identify the most useful and original ideas, then creative thought in and of itself "represents a

form of complex problem solving" (Mumford et al., 2003, p. 21).

  Personality factors. One of the earliest creativity researchers, Guilford (1950) examined

the traits and attributes that promote creativity. As a cognitive psychologist, he was primarily

interested in identifying attributes that could be fostered in children to promote their creativity.

His original factor testing focused on sensitivity to problems and traits related to synthesizing

patterns and logical traits related to selecting the best solutions.

In 1985, Basadur and Finkbeiner conducted two studies examining the attitudinal factors that support creativity-specifically ideation. The first study sampled 186 business managers to create a framework for attitudes that support creative thinking: an attitudinal preference for ideation and divergence; the tendency to not evaluate ideas prematurely, valuing new ideas, and belief that creative thinking is not bizarre. Following the framework development, they created a 14-item questionnaire that measures two of the attitudes: preference for ideation and divergence and tendency to not evaluate ideas prematurely. From a sample of 238 business managers they found that the attitudinal quality of deferring judgement was more closely linked to divergent and convergent measures than just preference for active divergence in and of itself.

In 1996, Basadur and Hausdorf extended the research of Basadur and Finkbeiner to test the other two attitudinal factors in their framework: valuing ideas, and the belief that creative thinking is not bizarre. From a large sample that included both business professionals and students, they determined that they needed to re-evaluate the framework to include 3 attitudes that promote creative behavior. Rather than the original two attitudes, they concluded that there were three distinct factors: valuing new ideas, not having negative stereotypes about creative individuals, and making time for new ideas (Basadur & Hausdorf, 1996). They concluded that creative behavior will be inhibited if the reverse of these attitudes is true in any given organization.

Press factors: Environmental and social forces. For nearly all studies of creativity, it is described as a core component of creativity, "no one could conceive of a person living or operating in a vacuum, so the term press is also implicit" in the ways creativity is defined (Rhodes, 1961, p. 305). Learning theorist Lev Vygotsky was also interested in understanding creativity, and posited that "every inventor, even a genius, is always at the outgrowth of his time

and environment. His creativity stems from those needs that were created before him, and rests

upon those possibilities that, again, exist outside of him" (Vygotsky, as cited in Connery, John-

Steiner, & Marjanovic-Shane, 2010). John-Steiner (1992) reinforces the importance of social and

environmental factors when conceptualizing creativity and learning, saying that "social bonds

play a significant role at all ages, for experienced as well as inexperienced thinkers" (p. 107).

Emphasizing the social nature of creativity is an important component of creativity, as in Plucker

et al.'s (2004) inclusive definition of creativity stated that creativity occurred in groups as well as

individually.

       Assessment & Measurement. While researchers define creativity fairly universally, and

identify the cognitive, attitudinal, and environmental factors that support the creative process,

there is disagreement regarding the most appropriate ways to assess and measure creativity. The

greatest body of assessment measures and supporting literature revolves around divergent

thinking assessments (Kaufman, Plucker, & Baer, 2008). Yet, there is a growing body of dissent

arguing against the validity of divergent thinking assessments' ability to effectively measure

creative potential (Amabile & Pillemer, 2012; Baer, 2003; Hennessey & Amabile, 2010;

Mumford et al., 2003; Plucker et al., 2004). Many theorists still encourage the use of divergent

thinking tests given the extensively documented history of its assessment and supporting analysis

documentation, which promote validity and reliability, but they now emphasize divergent

thinking as one part of creativity, rather than the only measure of creativity (Agnoli, Corazza, &

Runco, 2016; Hennessey & Amabile, 2010; Perry & Karpova, 2017; Runco & Acar, 2012).

Recently, divergent thinking assessments are being used in conjunction with other assessments to

provide a more inclusive assessment of creativity which includes convergent thinking and

attitudes and behaviors (Agnoli et al., 2016; Perry & Karpova, 2017; Plucker et al., 2004). The following section will identify and describe popular creativity assessments.

Divergent thinking assessments. The majority of creativity assessments fall under the category of divergent thinking assessments, and they are the most prevalent form of creativity assessment (Kaufman et al., 2008). Divergent thinking tests typically assess ideas' fluency, flexibility, originality, and elaboration. While there are several similar divergent thinking assessments, including Guilford's Structure of the Intellect (SOI) assessments, Wallach and Kogan's divergent thinking assessment, and Torrance's Torrance Tests of Creative Thinking (TTCT), the TTCT remains the most widely used divergent thinking test worldwide (Kaufman, et al., 2008; Torrance, 1963; Wallach & Kogan, 1965). Torrance's battery of tests includes both verbal (thinking creatively with words) and figural (thinking creatively with pictures) assessments. The assessment battery includes three figural assessments and five verbal assessments and utilizes standardized score reporting. The TTCT assessments have been employed around the world in different cultures, as well as comparatively between genders without statistically significant differences (Kaufman et al., 2008).

Mednick's Remote Associates Test (RAT) is another prevalent assessment of divergent thinking, but unlike emphasizing many aspects of divergent thinking (fluency, flexibility, originality, and elaboration), the RAT is based on associative theory and that creative thinking centers on making associations between disparate concepts (Agnoli et al., 2016; Mednick, 1968; Kaufman et al., 2008). It consists of 30 clusters of words, such as wheel, electric, and high, where the subject identifies a word that relates to all three, in this case: chair or wire. Reliability testing has proven satisfactory; however, validity testing has proven to be mixed (Mednick, 1968; Kaufman et al., 2008).

Consensual Assessment Technique (CAT). Another popular and well-documented creativity assessment tool is the Consensual Assessment Technique (CAT), developed by Teresa Amabile (Amabile & Pillemer, 2012). Unlike divergent thinking assessments, the CAT assessment relies on the social nature of creativity, and uses expert raters to independently judge a creative product. Similar to Csikszentmihalyi's (2013) systems model of creativity, CAT judges are experts in the target domain of the creative product. Using inter-rater reliability, the judges subjectively rate the creativity of each product relative to the existing group. Amabile defends the subjective nature of the assessment as one of its prime strengths, as the social nature of creativity and its assessment places individual creative behavior in a social context, "mimicking the way creativity is assessed in the "real world"" (Amabile & Pillemer, 2012; Kaufman et al., 2008, p. 55). Weaknesses of the CAT center around its overemphasis on creative products, thus undermining other factors of creativity (personality, process, press), resulting in an inaccurate measure of overall creativity (Kaufman et al., 2008).

Self-report assessments. Many assessments are based on self-report measures of production/behavior, motivations, and self-efficacy surrounding creativity. They are attractive to researchers and educators because they are quick and easy to score, and can yield useful data due to the subject's reflection on internal and past experiences (Kaufman et al., 2008). Many popular self-assessments center around creative personality testing, such as the Five-Factor theory assessments, which measures openness to experience, which has been proven to be a valid measure of creativity.

Creative behavior inventories are also extremely popular way of measuring creative accomplishments and activities, which can be one of the most valid ways to measure creativity (Kaufman, et al., 2008). Many creative behavior inventories exist, such as Hocevar's Creative

Behavior Inventory, Carson, Peterson, and Higgins' Creativity Achievement Questionnaire, and Runco's Ideational Behavior Scale. Creative behavior inventory assessments have proven to be reliable, however for some, such as Runco's Ideational Behavior Scale, their validity is somewhat ambiguous.

Exploring Public Perceptions of Art Museums

While many art museums are re-examining their role in their community and re-orienting their purpose towards facilitating and documenting visitor learning, including creativity, yearly art museum attendance is falling, especially among younger generations (Mason & McCarthy, 2006; National Endowment for the Arts, 2013; 2015). National organizations such as the National Endowment for the Arts and the U.K.'s Museums Association have conducted many national surveys regarding arts participation and barriers to participation, but very little research has been conducted that explores visitor perceptions of art museums in the 21st century. The following section will explore the existing research regarding public perceptions of art museums, as well as current visitation trends and barriers for attendance that may be due to persisting historic public perceptions.

Positive public perceptions about museums. Museums exist in nearly every community, for nearly any purpose. Regardless of whether people visit or do not visit museums, their general feelings about them are overwhelmingly positive (American Alliance of Museums & Wilkening, 2018; BritainThinks, 2013; Pettit & DiMaggio, 1997). In a 2013 study exploring public perceptions and attitudes regarding museums, BritainThinks, a research institution in the U.K., found that people generally have very strong emotional attachments to museums. Museums are important cultural showcases of their communities, despite the fact that the majority of participants are not regular museum users. In 2018, American Alliance of Museums

released a study building on existing research centering on public perceptions of museums broadly and found that ninety-seven percent of their national sample consider museums to be valuable educational institutions, especially for K-12 audiences. While non-visitors may not actively visit museums, they generally believe that museums serve an important public value in their communities and can preserve community heritage and culture (BritainThinks, 2013; Stylianou-Lambert, 2011; Yocco, Heimlich, Meyer, & Edwards, 2009). However, despite strong emotional ties to their museums, public visitation of museums is falling, particularly in art museums (BritainThinks, 2013; LaPlaca Cohen, 2017; National Endowment for the Arts, 2013; 2015).

      Art museums elicit negative perceptions and experience declining visitation. While the general public has overwhelmingly positive feelings about museums in general within their communities, perceptions about art museums specifically suggest that people may still have lingering negative perceptions regarding art museums in general and the typical art museum visitor more specifically. Historically, art museums were places for the upper class and educated (Dana, 1917). Beginning in the second quarter of the twentieth century, the general public began to critique the art museum as being "elitist and out of touch with the public," which, despite philosophical shifts, "has largely stuck" (Conn, 2010, p. 223). For instance, an Australian study exploring millennial perceptions of their national art gallery revealed that participants mostly felt art museums were "boring, didactic, unapproachable, and preoccupied with the past," while their visitors were "middle-aged and well heeled" (Mason & McCarthy, 2006, p. 21-22).

      In a National Endowment for the Arts (2015) study analyzing barriers to arts participation, they found that "individuals who identified themselves as "upper class were more likely to attend the arts, especially art exhibits, but they were less likely than other attendees to

say they wanted to learn new things as a motivation for attendance" (p. 3). Further, among

individuals with similar household income and education level, "those who self-identified as

members of the middle class were more likely to attend than individuals who self-identified as

working class" (p.3). These factors indicate that at least part of the motivation for art museum

attendance centers on class expectations. Additionally, while the public considers art museums to

be important for establishing a sense of place and preserving culture in their communities, they

generally view art museum attendance as something that is for school children and retirees, and

not for the average working age adult (BritainThinks, 2013; National Endowment for the Arts,

2015).

Visual and performing arts attendance has been declining for decades (National

Endowment for the Arts, 2015). In 1993, 40% of Americans reported visiting a visual arts

organization in the past year. However, as of 2012, that percentage fell to 21% (National

Endowment for the Arts, 2013). Additionally, in LaPlaca Cohen's annual CultureTrack report,

visual art museum memberships declined from 26% of American households in 2011, to 22% of

American households in 2017 (LaPlaca Cohen, 2017). This decline may be in part due to art

museums' traditional audience's declining population (older Americans), as well as an increase

in the number of leisure activities for the average American (National Endowment for the Arts,

2013; 2015; Yocco et. al, 2009). While the most frequently cited barrier for arts attendance was a

lack of time, Americans spend on average five hours every day engaging in leisure activities,

suggesting that art museums may not be meeting the mark when it comes to allocating those

hours according to individual preferences and values (National Endowment for the Arts, 2015).

As part of the Culture Track 2017 report LaPlaca Cohen also examined motivators for

cultural participation and found that the number one motivator was having fun. Given that

attendance at art museums is declining, and motivations for attendance center around enjoyment more than learning new things, it may be that art museums are not places that the public associates with having fun. Further, they examined barriers to participation, and found that the two most cited barriers aside from time, were "It's not for someone like me" followed by "I didn't think of it," echoing persisting negative perceptions about art museums (p. 13). This indicates that barriers center around relevance, personal preferences, and values, rather than logistical issues such as cost and convenience. Additionally, studies show that these psychological barriers may be even more significant for people of color (National Endowment for the Arts, 2015).

However, despite these psychological barriers to art museum attendance, creativity may be a latent motivator for the public to engage in the arts. The 2015 National Endowment for the Arts' study on arts participation barriers found that "men and women who value being creative and doing things in their own original way are 8.6 percentage points more likely to attend the arts" (p. 40). Additionally, this was most predictive for men, who have "15 percentage points higher probability of saying they value creativity and originality, as compared with uninterested non-attendees who share similar sociodemographic characteristics" (p. 40). This does not indicate that those who value creativity visit arts institutions in order to engage in creativity themselves, but it may be the case that art museums can find ways to capitalize on this finding and begin to overturn persisting negative perceptions through transparent communication with their community about creativity and the role of the art museum.

Summary

While early art museums prioritized collections and preservation as the primary fundamental purpose of museums, the purpose of museums has shifted towards emphasizing

education and learning. National educational movements towards cultivating 21st century skills have also influenced the ways art museums approach museum learning, resulting in several choosing to champion creativity and creative thinking as ways they impact their community. However, research regarding learning in art museums still centers primarily on school visits' promotion of other 21st century skills such as critical thinking and literacy.

Very little research exists exploring creative thinking or creativity in context of the art museum, despite the extensive and actively growing body of literature regarding creativity and creative thinking. For the purposes of this review, creativity is a nuanced area of research that involves persons and personality, the cognitive process, products, and environmental/societal press to produce ideas and products that are both novel/new and useful/meaningful. Since art museums typically house examples of Big C, or eminent, Creativity, their ability to promote visitor little-c, or everyday, creativity outcomes may be particularly significant if museums are able to highlight the four-Ps of creativity that underpin creativity in all forms. However, despite museums' increasingly visitor-centered approach, negative perceptions of art museums persist, with attendance falling, particularly amongst younger generations, for the last few decades.

If art museums are moving towards promoting 21st century impacts and beginning to identify creativity as core to their mission and the ways they provide public value, then museums also need to begin to identify, measure, and study their creativity impacts. Further, museums may be increasingly focusing on promoting and fostering creativity and creative thinking, but their visitors' perceptions about the role of museums still centers on preserving heritage and culture and content learning, rather than as places to engage in creative thinking. There seems to be a disconnect between what museums are trying to accomplish and how visitors think about these impacts, if they even consider them at all. There is a pronounced need for additional research

examining visitor creative thinking in the museum environment, but one of the nascent

components needed to accomplish this research may be establishing how the public feels about

this move towards creative thinking.

Chapter 3: Methodology

Problem Statement and Research Questions

The purpose of this study was to better understand visitors' perceptions of the role art museum exhibits can play in promoting and fostering creative thinking. The following research questions guided this study:

1. How do adult art museum visitors define and differentiate creativity and creative thinking?

2. In what ways, and to what extent, do adult art museum visitors describe using their creative thinking skills during their exhibit experience?

3. In what ways, and to what extent, do adult visitors consider creative thinking as an important component of their art museum exhibit experience?

This study used a descriptive survey design, and data were collected using semi-structured interviews with adult museum visitors. This chapter describes the sampling, data collection, and analysis procedures, as well as addressing methodological limitations of the study.

Research Sites

Data were collected at three art museums. Sites were selected using the following criteria: (1) A demonstrated commitment to creativity and creative thinking; (2) Encyclopedic art museums in order to allow for similarity in structure and content across sites; and (3) Similarly sized institutions that are geographically diverse. Given this set of criteria, the researcher collected data at Columbus Museum of Art, Denver Art Museum, and Dallas Museum of Art. These three sites have demonstrated commitment to creativity, as evidenced through a history of research and publications as well as a physical commitment to creativity in their museums, which are either dispersed throughout their gallery spaces or through establishing dedicated

galleries and studios explicitly for creativity (Fischer & Munley, 2014; Foley, 2014; Levinson, et. al, 2008; Mostov, 2014; Pitman & Hirzy, 2010).

Sampling and Participants

Semi-structured interviews were conducted with 52 adult art museum visitors over a period of nine days: one Friday, Saturday, and Sunday at each site in February and March of 2018. Twenty-one percent (n=11) of participants had visited the museum between one and three times in the previous two years. Twenty-three percent (n=12) of participants had visited the museum four or more times prior to their visit. Fifty-six percent (n=29) of participants reported that they had not visited the museum in two years or longer.

A total of thirty-five females and seventeen males were included in the sample. Twenty-five percent (n=13) of study participants were between the ages of eighteen and twenty-four years old. Twenty-seven percent (n=14) of participants were between the ages of twenty-five and thirty-four years old. Twenty-one percent (n=11) were between the ages of thirty-five and fifty-four years old. Twenty-seven percent (n=14) of participants were fifty-five years or older.

The researcher utilized random sampling, so every third individual who appeared over the age of 18 was approached for participation. All participants were informed of their rights as research participants and verbal consent was obtained. All interviews were audio-recorded and transcribed for analysis. Semi-structured interviews featured a set of traditional open-ended interview questions, a card sorting activity, and a brief self-administered questionnaire (see instruments in Appendix A). Components of the questionnaire regarding visitor perceptions of the institution itself were adapted from, or used in, Denver Art Museum's 2014 study, "Tapping into Creativity and Becoming Part of Something Bigger" (Fischer & Munley, 2014).

Data Analysis

The interview audio recordings were transcribed, and interview content was emergently coded. Open-ended responses were analyzed using an emergent coding system in order to identify themes across participant responses. Close-ended responses were quantified and analyzed using descriptive statistics. Content analysis was used to identify trends and patterns across the data.

Limitations

Limitations to this study include the study design itself. The most valid and reliable way of measuring creativity in the literature is through divergent thinking assessments, most notably the Torrance Test of Creative Thinking (Torrance, 1966; 1974) and the Remote Associates Test (Mednick, 1962; 1968), rather than relying on self-reporting. However, self-assessment measures of creativity have been utilized to understand creative behaviors (Pluckman, Kaufman, & Beghetto, 2015). The researcher concluded that for the feasibility and scope of this study, self-reports of creative behaviors fulfilled the research questions by using self-reporting of creative behaviors to investigate the broader perceptions and attitudes surrounding creativity in art museums. Further, due to the time constraints and the scope of the study, it was not feasible to conduct inter-rater reliability at the analysis phase of the study. In the event that these findings are used in other publications, inter-rater reliability should be conducted to strengthen the overall validity of the study.

Additional limitations center around site selection and sampling. By limiting the criteria for research site selection to those that had publicly demonstrated a commitment to creativity and creative thinking, the researcher may have excluded sites from participating that are also working to promote and foster creativity in their museum spaces, perhaps even in a more integrated way

than the selected research sites. However, for the purposes of this research study, a public

commitment was important to the researcher since the study revolved around visitor perceptions.

The researcher hoped that for some visitors, coming to places explicitly linked to creativity may

be motivators, either explicit or implicit, for their visitorship, and thus, might also value those

aspects of their art museum experience.

Some limitations to this study resulted from sampling. Two thirds of the sample self-

identified as female. This may be due to a higher female attendance rate, but it also may be due

to the nature of questions, where targeted males in groups that included multiple genders often

encouraged the females in their group to respond to interview questions instead. Further, the

overall ages of participants may skew slightly younger than actual museum attendance due to the

time constraints on intergenerational groups visiting the museum with children.

Chapter 4: Results and Discussion

This study utilized qualitative and quantitative data to investigate adult visitors'

perceptions of the role that art museum exhibits can play in fostering creative thinking. In order

to more fully understand these perceptions, three components of visitor perception were

examined: (1) How visitors define and differentiate creativity and creative thinking; (2) In what

ways, and to what extent, visitors describe engaging in creative thinking skills during their

exhibit experiences; and (3) In what ways, and to what extent, visitors consider creative thinking

as an important component of their art museum experience. This chapter presents major findings

from each of these research questions.

RQ1. How do adult art museum visitors define and differentiate creativity and creative

thinking?

Ways in which visitors define creativity

Participants' definitions of creativity were coded into five emergent categories: (1)

Relating to affect and/or expression; (2) Occurring outside reality or environmental/social

constraints; (3) Relating to cognitive thinking processes; (4) Resulting in a tangible product of

some kind; (5) Occurring through reality or environmental/social constraints. Forty-eight (n=25)

percent of participants defined creativity according to more than one of these categories. Despite

the interview occurring within the context of an art museum, only 13% (n=7) of participants

included examples exclusively related to art and artmaking in their definition of creativity.

a. Relating to affect and/or expression

Fifty-six percent of participants (n=29) defined creativity as relating to affect/emotion

and/or expression. Within this thematic category, interview responses fell into two broad

categories: creativity as **a form of expression, often a personally meaningful form of self-expression**; and creativity as involving **feelings and emotions**.

Creativity is a form of expression, often personally meaningful to the individual.

Some participants described creativity generally as expression. One participant said it was "an expression of a thought, or maybe an expression of your view of reality. It's hard to describe." Another described creativity as "the best way of expression." Others simply named "expression." However, many participants built on these general or rudimentary definitions by stating how expression is particularly personally meaningful. For example, one individual explained,

> "To me, creativity is wild in general, just because it's expression. Even people who don't think that they're creative, they put thought and creativity into their everyday lives [through] what they wear and what they do in their everyday experiences. Yeah, it's expression, but it's how you let that expression out into the world."

Another individual elaborated on expression, linking it to their individuality, saying, it's "expression of self…It's the creation of my thoughts, emotions, and experiences and it's completely me and no one else." For this participant, expression manifested itself holistically, pulling from prior knowledge, experiences, and emotions and combining into how they view themselves as a unique individual. Another participant identified the multi-layered nature of self-expression, explaining that creativity is "probably" defined best as self-expression, which could entail a range of manifestations, from "what you're wearing and [how you] do your hair. Or it could be design work, or painting."

Creativity involves expressing feelings and emotions. For other participants, creativity was a form of expression, but it was particularly suited for exploring feelings and emotions. One participant made this connection by saying, "I think it's a way for people to express themselves. A lot of times in that expression you see emotion as well." For several, creativity was completely centered around emotive expression. For example, one participant defined creativity as "the

expression of emotion, whatever you're feeling." Another said it was "expressing how you feel, being emotive, and being truthful about how you feel. It's where you can be most yourself and it's an expression of what you tend to hide." They went on to explain that emotive expression allows them to "navigate through those levels to express that." In that same vein, another participant defined creativity as "an expression of either a current feeling, or a past feeling, or a theme." They said, "That's how I see creativity, as a way of expressing yourself through a certain medium, whatever that might be...it can be very personal and heartfelt. It can come from a place like that."

While participants who described creativity in terms of self-expression often focused on their everyday creative expression of self outwardly to the world, participants who spoke about feelings often focused on creative expression as a means to create tangible expressions of their feelings. One participant described the need for emotive expression by saying, "Very often it's just like something that you may have been thinking about, or pondering. You need to express it, but words don't express it. It's more or less a feeling. So the words don't work." This participant suggested various means of expression that don't involve words as a means to express feelings and emotions such as music and formal artmaking techniques, implying that by eliminating words and exploring feelings instead, "Your mind ponders, wanders, and leads to more and more and more and more. It's just another way of expressing yourself that is not as limited." Another participant echoed this idea by saying, "It's a way of putting your feelings and the things that are inside of you and making something concrete out of it."

b. Occurring outside reality or environmental/social constraints

Forty percent of participants (n=21) defined creativity in opposition to, or outside of, reality or societal constraints, meaning that it occurs within the individual and is often

characterized by a sense of freedom or spontaneity and/or going against the grain, operating

outside of established norms, and thinking outside the box. Within this thematic category,

interview responses fell into two broad categories: creativity as being **new or original**; and

creativity as **free and/or spontaneous**.

     Creativity produces something new or original. The majority of participants talked

about creativity as having a sense of novelty or originality. For example, one participant

described creativity as, "somebody doing something that has not been done before." Another

echoed that sentiment, saying creativity is "using your senses to explore the world, and creating

something new in the world." A handful of participants described this need for novelty as a sense

of newness that is specific to that individual. One participant described it as "coming up with

something that you hadn't thought of before," while another described it as "taking what you

have and doing something different and new, even if it's just new to you."

     A sense of originality was imperative for many participants. They used phrases such as

"thinking outside the box" as key components for how they defined creativity. For many

participants, pushing against the norm was key to being creative. One participant described

creativity quite simply as "breaking norms." Another identified creativity as the "borderline

between the normal and abnormal."

     Creativity involves a sense of freedom or spontaneity. Other participants described

creativity as requiring a sense of freedom or spontaneity. One participant best described this

phenomenon by saying,

> "[Creativity] is just kind of blind sometimes. It's really just going with what it is.
> I feel like you can't force it, because as soon as you're trying to force something
> you're not really creating anymore. Then you're trying to make something, and
> making and creating are much different things to me. With making, you go in, and
> you follow a recipe. You go from A to B to C, and you end up with having made
> something. If you go in and you're freestyling, you're creating something at that

point. [And it's] something that is uniquely you. With making something, you
may be very good at it, but you're not making something that's uniquely you.
You're making something that somebody else has already made."

Another participant echoed this need for freedom, or "freestyling," by saying, "I'd say it's just

being spontaneous… just kind of going for it."

c. Relating to cognitive thinking processes

Thirty-seven percent of participants (n=19) described creativity as involving one or more

cognitive processes. Within this thematic category, interview responses distributed equally into

two broad categories: **critical thinking skills**; and **idea generation and exploration**.

Critical thinking skills involved in creativity. Several participants defined creativity as

"occurring in the mind," simply referring to it as the process of "thinking" or "concentrating

really hard." However, a few participants elaborated on this process more thoroughly. One

participant shared, "I always think of creativity as being a higher-level thinking skill that kicks

in. It's innovative. [It's] almost like being mindful; it's focused. It's inside rather than

outside...It's kind of like opening up the drapes and letting your mind explore." Another

described creativity as, "thinking mostly. It starts with thought," which may or may not

"manifest itself physically in words like writing poetry, or something more physical like physical

art."

Others identified problem-solving as a key critical thinking aspect of creativity. One

participant described creativity as "a way of intelligence… It can be with different ways, not

only with art. For me it's more about solving problems in different ways." Another echoed that

sentiment when they described how they're creative at work:

"When I was working, sometimes you'd have a challenge. I did administrative
work, which is nothing like teaching. But sometimes it was like, 'Well how do we
deal with this?' When I did desktop publishing I'd have to take words and then
find some images and make it look like something that people would want to see.
It involved a lot of problem solving."

Idea generation and exploration in creativity. Several participants focused on idea generation and exploration in a more isolated manner. One participant defined creativity as involving both "imagination and exploration," saying, "I'm being creative thinking about things, or thinking about them in a different, less analytical way, than I do normally. [I'm] seeing things through different perspectives, or through different lenses." Another described it as "creativity means being able to play, really. I'm a graphic designer, so I play as in, I can pull different styles from different periods to see if they go together…" These two examples describe two different ways participants explored ideas. However, participants identified creativity as the process in which they generate ideas as well. One participant defined creativity simply as "having an idea about anything…" and "being inspired by something." Another described it as "...just thinking and coming up with ideas…"

d. Resulting in a tangible product of some kind

One quarter of participants (23%, n=12) specifically identified creativity as ultimately resulting in some kind of tangible product. For example, one participant described the way they think about the creative process as "converting ideas from the mind to work with the hands. I think the mind is moving the hands to express whatever it is you want to express." Another individual defined creativity similarly, saying,

> "I guess for me, creativity means creation. So, taking something that is only in your mind and creating some kind of physical representation. That would be the art of being creative. [It could be] drawing, or making a statue, or a film, or clothing. Anything."

Other participants described the need for tangible production more generally, using phrasing that centered on the idea of creation or making as central to what it means to be creative. For these individuals, phrasing such as "making something," "making things with your

hands," taking "things that are inside of you and making something concrete out of it," or "physical representation" were common.

e. Occurring through reality or environmental/social constraints

Twenty one percent of participants (n=11) identified ways that creativity exists within realistic, environmental, or social constraints. Of this group, the majority of responses centered around creativity occurring through the use of existing resources, either physical or experiential to produce something tangible or intangible. For some, responses centered around the physical making, and using the materials at your disposal to create something new. One participant described this constraint as, "creation of anything out of the medium that you have around you." Another suggested that creativity is "using the things that are available to you to create a new vision or to create something new." They went on to describe an example that was particularly interesting to them:

> "So, to use an example from the galleries, in the 1800s, or even before that, all they had was this block of stone and a chisel. So, they were just like, 'Okay, I'm going to use those two things to make something else- something new.'"

Some interview participants identified more intangible resources that constrain creativity. For them, creative products came from building on prior knowledge and experience. For example, one participant described creativity as "the ability to combine different ideas, sources, and inspirations from all walks of life and all memories to create something new." Another participant supported this claim in their own way, saying "You have to, you know, take what you know and pull it together." One participant related the creative process to their own writing practice. They said, "For me, it's about taking the abstract ideas of writing to visualize some kind of story, and then you find a way to organize it. And that organization is where the creativity has to be contained. Into the constraints of reality."

Ways in which visitors define creative thinking

      Study participants were asked to consider what it means to "be creative" and "think creatively," and share whether the two had different meanings for them. The majority of participants ((75%), n=39) identified thinking creatively as different or separate from being creative. Table 1 shows the various ways in which participants thought of them as different.

Table 1: Ways in which visitors articulated the difference between being creative and thinking creatively (N=39)

Category	Frequency of responses	Examples
Being creative requires some kind of action or execution	54% (n=21)	*"I don't know if just thinking creatively is enough. I think you have to act on it."* *"There's a difference because being is to put in action, where thinking is not. Sometimes you just get to that point when you just think, and you can have brilliant ideas, but then to put those in place is another step."* *"You have to execute. You have to make something. You can't just keep it to yourself."*
Being creative is harder or riskier than thinking creatively	21% (n=8)	*"Well, being creative is definitely taking risks… I think they're different. One is risky to do it- very. Then the other one, you're just thinking about it. There's no risk there, other than inside your head."* *"I can think creatively all I want, but that doesn't mean that I can be dexterously creative."*
Thinking creatively is harder or more purposeful than being creative	15% (n=6)	*"Sometimes when you're being creative, you don't mean to be… it just happens. But when you're thinking creative, it's more purposeful. So I think one is more planned."* *"Being creative is just something that anyone can do, like on a whim. I would say that thinking creatively is actually a difficult task to achieve."*
Being creative is making artwork or being artistic	13% (n=5)	*"I'd say I do more of the thinking side of things, because only once in a blue moon do I do some watercolors in terms of being creative. I don't see myself as being somebody who is creating music or creating art."*
Being creative requires sharing creative efforts with others	10% (n=4)	*"Someone can be a creative thinker, but not necessarily looked at as creative, because they think about things maybe only to themselves. They don't share them. Being a creative person is taking those thoughts, sharing them, and having them viewed by other people."*
Unsure	8% (n=3)	*"I don't know, maybe. There are definitely times when I feel like I'm not being very creative at all. So I don't know."*

A smaller percentage of respondents (25%) described thinking creatively and being creative as similar. However, distinguishing exactly what made the two similar or the same in meaning was more difficult. Table 2 shows the range of ways in which study participants felt thinking creativity and being creative were similar.

Table 2: Ways in which visitors articulated the similarities between being creative and thinking creatively (N=13)

Category	Frequency of Responses	Examples
Thinking creatively and being creative are inextricably linked	46% (n=6)	*"I'm not really sure that they stand alone. Somehow they have a symbiotic relationship, but I don't know if I could define that at this point."* *"I think they go hand-in-hand. I think if you're making creatively you have to be thinking creatively. Those who think creatively, obviously don't have to be makers, but the makers are obviously thinking creatively. It's like a square is always a rectangle, but a rectangle isn't always a square."*
Thinking creatively and being creative are the same thing	38% (n=5)	*"I guess it's an action versus a state...being creative isn't a specific pinpoint in time, it is a range of actions."* *"I think they're essentially the same thing, but one is potential energy versus kinetic energy."*
Unable to define why	15% (n=2)	*"They're kinda the same to me, kinda the same."*

Some participants made clear decisions about whether thinking creatively and thinking creatively were fundamentally the same or different, but their rationale for either choice included process. Twenty-seven percent (n=14) described thinking creatively as something that precedes being creative. One participant explained their rationale:

"Generally, I think being creative is like doing stuff, and having that action. Thinking creatively is like thinking out of the box and looking at different things from different perspectives. So, you think, then you have the action of doing. So, to me, it's like a process."

Additional interview participants described the process as being "connected," describing the

process as "acting creatively is maybe more of a result of thinking creatively." Another described

the connection by saying, "To be able to be creative, you have to think creative first. It's almost

like a process." For one participant the act of being creative turned abstract ideas into ideas that

were realistic and achievable. They said, "Thinking creatively is the first part of the process I

guess. You're sort of going from, sort of funneling down from the entire universe is at my

disposal, to, this is what I can actually do in this moment."

RQ2. In what ways, and to what extent do adult art museum visitors report using their

creative thinking skills during their exhibit experience?

Participants were asked to review a series of 17 actions (6 idea generation-based, 6

critical thinking-based, and 5 general outcomes), and to indicate which ones they felt they had

done during their art museum visit that day. Pulling from the literature, creative thinking

involves both idea generation and aspects of critical thinking. Several examples of how that

might look in an art museum gallery were utilized as possible actions that visitors could select.

Table 3 presents the 12 creativity actions, and visitors' self-reported engagement with each one.

Table 3: Participant self-reported engagement in 12 creative thinking actions (N=52)

Creative Thinking Action	Frequency
Idea Generation / Curiosity	
I was curious about what an artwork was about	96%, (n=50)
I was curious about how an artist made an artwork	88%, (n=46)
I used my imagination	79%, (n=41)
I came up with many ideas about what an artwork might be about	65%, (n=34)
I had or asked questions about an artwork	62%, (n=32)
I thought of an idea that I hadn't thought of before	56%, (n=29)
Critical Thinking	
Looking at an artwork reminded me of something happening in the world today	67%, (n=35)
I made connections between my own life and an artwork	63%, (n=33)
I found visual evidence in an artwork to support my ideas about what was happening	61%, (n=32)
I considered multiple perspectives or opinions	60%, (n=31)
I transformed my initial ideas about an artwork after talking about it with someone, reading about it, or carefully considering it	38%, (n=20)
I came up with many ideas about what an artwork might be about, but then decided on one I thought was best	27%, (n=14)

Where study participants said they took a particular action, they were asked to give an example

of it.

<u>Idea Generation and Curiosity</u>

a. I was curious about what an artwork was about

For the majority of participants, curiosity centered on aspects of the artist, including artists' intentions/what they were trying to convey, artists' inspiration/feelings, an individual artist's specific artistic process, or, the personal significance of an artwork to the artist. One participant described their thought process of being curious with a friend about what an artwork was about, saying, "We were really curious. There was one where there was a human body arched backwards with a horse making the head. We were so curious, and we came up with a whole story." They explained that the artwork in question also included words in Spanish, and that the title of the artwork did not relate to what they were seeing. They went on to say, "So that made us really curious, like why? *Why??* What was he thinking? What was he doing...how did he make that jump [from a man to a horse to words]?...We really wanted to know where he got that from."

Other participants considered the ways the artwork was significant to the artist, or the emotions that the artist had while they were creating their artwork. One participant described their typical experience as, "I always try and kind of reach into the artist and think, 'What could this possibly mean to them?' Why was that necessary for them to get out?'" One participant said, "I wish I could ask him…I want to know what the heck was going through his mind."

Other participants were curious about the subject of the artwork and the artwork itself. They wondered about the formal details of the artwork such as media choice, the purpose of the artwork, the validity of the artwork, and the historical context or story behind the artwork. One individual described their experience in an immersive exhibit saying, "I'm still not sure about what the pumpkin exhibit was about…I will have to ponder that for a while. I said I felt like

Dorothy in Oz, because it was magical in that regard, but I'll have to ponder that awhile and think about it." Others wondered about the historical context of the artwork itself. One participant sought out works from the European galleries, especially artwork about mythical stories: "I kind of gravitated towards those things so I could read about what the actual story was about." Another participant also expressed a curiosity about the historical context of a work of art during their visit:

> "There's one upstairs about strikes in a mine, and mine workers were striking. Then there was a revolution or a riot and people got killed. I was just really confused. All I saw was dead people laying on the ground and other people being really upset and I didn't know what it was about."

When prompted to elaborate on what specifically they were curious about, the participant said, "If it was real, if that actually happened. And then, why it happened or what caused it." Other participants' curiosity centered around the validity of an artwork in the scope of art history. Many participants wondered who makes choices about whether a work of art is good or not. For example, one participant expressed a sense of confusion after looking at a mixed media work of folk art. They said, "Is it great art? Someone's going to have to tell me…" Another said to their companion, "I was asking you what makes this great art… I wasn't sure. I'm not good at figuring out why this is considered great art."

Other explanations for why participants felt curious about a work of art were attributed to the fact that abstract or contemporary art is to intended provoke curiosity, or that their questions were not answered through wall text or interpretation. For example, one participant said, "I would say, the abstract pieces have me wondering what this is about. And that's the purpose of them, to make you question what it's about." Another participant said, "I didn't get answers to those questions because people around me didn't really know either."

b. I was curious about how an artist made an artwork

Most participants were specifically curious about technical aspects of art making including: the technical skill of the artist, artist tools, color choice, and media choice, and how long it takes artists to create works of art. Examples of this action typically focused on works of art that involved some kind of three dimensional or sensory element such as sculpture, textile art, and mixed media works of art. When talking about media, some individuals were interested in specifically why artists choose the media they do, while others spoke about how sometimes they were surprised by what they were seeing. For example, one individual said, "A lot of times I'm curious about the medium…Sometimes I think it's obvious, then I go up and read the placard and there's a lot more to it, and I'm surprised by it." Other participants mused about the time and energy artists put into their artistic products. For instance, one individual marveled at a Chihuly sculpture: "I just think that must have taken so long to make, and I admire how long he must have worked on that."

A smaller proportion of study participants identified other aspects of being curious about how artists made works of art. For example, one individual related their experience viewing textile artwork to their own work as a maker, saying, "You know, we do fabric arts- beadwork, cross stitch, quilting. So, I can't even imagine. They kept everything even, and the stitches flat. It was just incredible." Others discussed topics relating to artists' inspirations and intentions. One individual wondered, "Why make it [an oil painting] so realistic? Usually oil paintings are very characteristic and they not super realistic. It's almost like, what inspired this artist to make it hyper-realistic?"

c. I used my imagination

Participants described various ways in which they used their imagination in an exhibit. For example, many individuals described using their imagination to put themselves inside the scene of an artwork, and imagine what that might feel like. One individual described their thought process saying,

> "There was one specific piece where it was an old picture of a cattle farm and there was just nothing in the horizon, like the whole thing. I looked at it and thought, 'Wow, that's incredibly calm and peaceful.' And I was wondering what life would be like in an environment like that where you're just by yourself, surrounded by nothing."

Other individuals also envisioned themselves inside of landscape paintings. One described their process as "just picturing and thinking of being there. Seeing it and making it your own reality. I just try to picture myself in that situation and get a sense of peace." For others, portraiture sparked their imagination. One individual described their imaginative experience as when they were "looking at the portraits of women," and imagining "how inconvenient life must have been, just thinking about how [they] would have functioned in that world." For others, it was more lighthearted. One individual imagined themselves inside a Lego city. They said, "I imagined that I lived in this little world, you know, going through the streets of the Lego world. I imagined myself walking down the Lego street, and having pizza with Ninja turtles."

Other participants described using their imagination as a means to understand what they were seeing in the artwork or to determine its meaning. For example, several people referred to using their imagination to look at abstract or contemporary artwork. One participant best explained their thought process while looking at a painting of swirling black, white, and red paint, saying,

> "I was trying to see if there were any hidden symbols in there because there were a lot of strokes. I was trying to see, 'Do I see a star there? Or something hidden?'

So, I tried to use my imagination to find things in the painting to look for a secret hidden meaning there."

Other individuals constructed narratives while engaging with works of art, looking at a work of art and imagining a story happening within it that may or may not be tied to historical context. For example, one individual described looking at a collection of Islamic art: "In my mind's eye, [I was] seeing some events that might have transpired that were depicted in the frame…seeing it almost like I'm reading a book." Another described their imaginative process generally when looking at artwork, saying, "For me, I start making up scenarios and stories and whatnot in my head." Others identified aspects of the historical context behind the work of art as what sparked their imagination:

> "I'm really interested in social history… What we see in artwork are things that were created by artists for people who could afford to purchase it because that's what they did for a living. So you get a closer look at the upper classes more so… than you would see in everyday life. But the one picture of Brooklyn, you kind of get an idea of everyday life, so I was thinking about that."

Finally, some individuals used their imagination more broadly to make a personal connection with a work of art. For example, one individual said, "You have to use your imagination to find out what the art means to you, as opposed to what it means to other people." Another described an exhibit as "bringing back a memory of being a little girl." She said, "I don't even remember what museum I was at, I was so little. But I remember there was this huge fairytale castle for little dolls and everything. So, it just kind of took me back to that…"

d. I came up with many ideas about what an artwork might be about

When individuals spoke about their ideas around the subject of an artwork, their responses were generally less about identifying concrete ideas about what the artwork was about, and more often about exploring thoughts and questions regarding the subject matter of an artwork. For example, one individual explained,

> "I spent a lot of time looking at that painting, because the more I looked at it the more I couldn't tell if it was one figure, two figures, three figures, or if it was one figure with different gestures representing multiple pieces of the person, or multiple times of that person's experience."

One participant described their experience looking at a painted portrait of a father and son fishermen. They wondered, "What they might be doing, where they might be going, and questioning where they were from, and what background the figures in the painting had." Another individual described their ideas examining a political painting, and how they were placing it in some historical context. They said,

> "It made me think, 'Is this talking about now?'…Is it drawing from the seventies, because it seemed like it could be drawing from seventies propaganda, but it also feels very meme-culture almost, like the "tag yourself" memes… [I was] just trying to find out when it's trying to draw from or if it's trying to interconnect the two."

> Other participants provided examples that explored ideas centered around the artist, whether that be the artist's inspiration, their life, or another personal aspect. For example, one participant reflected on their thinking while looking at a series of photographs:

> "They're definitely documenting life and what was going on in their world, but why specifically these instances? There's so many things that happen in our lifetime. Why [did they] choose these ordinary things or these extraordinary things… Why this specific moment, what was important about that?"

Another participant described abstract art broadly as suggesting many ideas about artists' thinking. They said,

> "You're not supposed to find a meaning, like finding a person or something. You're supposed to find a purpose… so I'm like maybe this means he was curious about he own life, or he has his own fears about where he's at in his career, or his own personal dilemmas, maybe."

> Many participants generated ideas from past experiences or prior knowledge. Some individuals referenced having taken an art history class which helped them think about works of art, especially the symbolism in older works of European art. For example, one participant saw a

panel called *Chastity* which featured a unicorn and said, "I had learned in an art history class that a unicorn meant there was a virgin in the piece, based on the time period that it was from. So that would've made sense, especially with the chastity part." Another individual noticed a painting of a man with a rainbow-shaded halo and used their prior knowledge to teach their companion about a story from the Bible:

> "I shared with him the halo kind of had a rainbow color to it that tells the story of Noah. So, after the flood there was a rainbow when he released the doves. So, it's showing the moral pious person that the portrait was trying to represent. We think that's what the idea behind it was, other than just being angelic."

Another individual connected a work of art to their prior experience of growing up and seeing the Colombian Civil War on television. They looked at Colombian works of art, and said, "I remember the Colombian Civil War. I was in high school. But I didn't know all of that. They were talking about Bogotá, both in the show [*Narcos* on Netflix] and the gallery."

Others generated ideas to construct narratives, stories, or general themes about works of art they saw in the galleries. One participant described a narrative building experience they had interacting with a painting that featured a series of figures, all clothed, but that featured one nude figure with a face that had been covered in gold leaf. They wondered, "Why is the face painted in gold? I was thinking to myself, 'Well it's probably somebody close to them, and that they didn't want to reveal the identity of the person.'" Another individual described their thought process as they constructed a narrative based on what recognizable elements they were seeing within a series of painted panels: "It got easier to piece it together once I allowed myself to not focus on the direct plot of it…as we went through it we were able to imagine what that story and that experience was."

e. I had or asked questions about an artwork

Study participants reported generating questions about the artwork itself and/or about the artist. Questions about the artwork were broad in nature, as the artworks represented in the museum are broad in subject matter and time period. Some questions centered on the media used in a work of art, or other formal aspects such as color choice. For instance, one person reflected, "What took me in initially was the colors. So, I wondered, 'Oh, what are all these colors about?' Then as you go in, the space is laid out in a certain way, so then it makes you wonder what it is about, like why?" Another wondered about the small details of what they were seeing when they noticed that an ancient work of art had scratches on it: "It looked like someone had scratched out one of the gods or deities. So, I was really curious as to whether that had happened naturally or whether someone had actually done that intentionally at some point." Other participants had questions about what they were seeing in an artwork, particularly with older works of art. One individual said, "I always have a lot of questions about the Renaissance room… I never know what the imagery is. [My companion] has to tell me."

Questions that centered around the artist typically focused on a desire to better understand the artist's thinking. For instance, several participants identified questions surrounding artist emotions or intentions behind why they created a work of art. One participant wondered, "Is the artist doing this in jest? Is it something that is just kind of a polaroid of his life or whatever?" Another asked, "Where did this [artwork] come from? What was going on in his life?" Another simply asked, "What's their thought process? Why did they think about this?"

f. I thought of an idea I hadn't thought of before

Some study participants had new ideas surrounding mediums of expression or artmaking techniques. Many of these participants identified themselves as artists and shared plans to try a

new technique in their own practice. For instance, one participant shared that they had seen an

artwork that was created using a "kitchen tool or a sculpting tool to create some depth and

dimension on the two-dimensional surface." They went on to share that it made them think

"about a project [they're] working on for someone, and maybe incorporating something like that

into the piece that I hadn't thought of doing before." Others described seeing new materials that

they hadn't considered as art making materials before. For instance, one participant said, "I

didn't think of quilting being a form of art, but after visiting the textile room and then going

upstairs and seeing the quilts on the wall, that made me think about that and that connection

there." Another made connections between the range of mediums seen in the art museum they

were visiting. They were reflecting on the architecture of the building and making connections

with some of the sculpture they saw in the galleries. They said,

> "I just thought of the shape of this building- the angles being structural to make it
> look like it's floating when in fact it's holding 7,000 tons of steel…There's this
> statue of a horse out there that's metal, and it made me think about the way the
> building's built and how everything's built…Sculptors and dancers have that
> similar mentality of trying to make it look effortless, when in fact, every muscle
> in your body is tense and it's very difficult."

Other participants shared ideas they had about other cultures or building new

perspectives. Several individuals spoke about ideas regarding the human form or what it means

to be feminine or masculine in other cultures. For instance, one participant said,

> "I was in the Papua New Guinea section. I realized that a lot of the art was very
> focused on phallic [imagery] and breasts, and I was thinking that maybe in their
> culture that was a sign of a hierarchy maybe… I was thinking maybe that's a sign
> of masculinity and femininity in their culture at the time when those were
> created."

For many of these participants, their companions' perspectives were an important part of coming

up with new ideas. For instance, one individual shared that they considered new perspectives

while having a conversation with their friend: "He was like, 'Yeah that represents an

organization or society today.' And I said, 'Oh yeah, I've never seen that. I've never thought of it

that way before.'" Another shared how their companion helped them think about a culture in a

new way: "She's taking a class on Chinese art… and she said that in China, bats are considered

lucky. So that was an idea I had never thought of before."

For some, their experience in the galleries uncovered an idea that made them want to go

back and reconsider artwork they had seen in the past:

> "I was thinking that I need to go back and look at several [paintings] that I always
> thought were angry paintings and re-consider them…When they're just placid you
> think, "calm." and when you see a big wave, you think "angry." But maybe not,
> you know?"

Another described a particular artwork that they return to at every visit. They said, "Every time I

see it, I have new ideas. Every time."

Critical Thinking

a. Looking at an artwork reminded me of something happening in the world today

Exhibits that promoted the most connections to things happening in the world today

focused on social and environmental issues. For example, one research site featured an exhibit

centered around a symbolic and abstracted visual timeline of one Native American tribe from

their ancestral roots and heritage through to modern day. Examples of connections from this

exhibit centered on issues regarding Native peoples and colonialism. One participant reflected, "I

know on the reservation they have a terrible time with alcohol especially, some drugs, and fast

food… that was not their lifestyle for centuries, and so those things have changed." Another said,

"Looking at the mural journey of the human spirit, and seeing both the former effects of

colonization, and the perpetuating effects of colonization on other peoples and on the

environment." Another site had an exhibit of African American family photos which prompted

many participants to make connections to racial issues in the world today. For example, one

individual said,

> "It just reminds me of where we are and where we came from in this country, and that things are never so smooth…I think it's come a long ways with our race issues in this country, but not the way it should be. It's very sad to see those things and realize it's not much better."

The third research site had two small exhibits within a larger exhibit that explicitly dealt with

social, political, and environmental issues. One exhibit highlighted censorship, particularly the

banning of books throughout the world. Two individuals identified this exhibit specifically in

their example:

> "It's just kind of crazy to see that nowadays because you don't think of censorship as much anymore, but you see it in your movies, and their ratings and everything. Like if you go to different countries like Sweden, they're a lot more open about nudity. But you can't go and see that in a lot of American theaters."

The same research site also featured an exhibit highlighting environmental issues. One individual

reflected on their experience saying, "There's a section in there that's all sort of political climate

change and environmental degradation. And that's been in my mind lately." Another participant

explained their experience at the same exhibit saying, "There were a couple pictures in there

about ivory and things like that… you know, to abstain from using and buying ivory… and

saving the San Francisco Bay from overfishing. So I was thinking about a lot of environmental

things there."

For some, interpretation of individual artworks sparked a connection between the art and

a bigger issue in the world. One individual reflected on an abstract painting that they had seen

with wall text that said the work had been made for the AIDS Foundation: "It reminded me

personally of all the people we have lost through AIDS…and that we have all these people that

we have lost through disease and outbreaks." Another individual reflected on wall text that

promoted "inclusion and accepting diversity, including all kinds of thinkers and people." They

said, "I consider this country in dire straits in this moment…I thought that used to be true about this country, but I don't know anymore." Another individual described engaging with a sculpture of a nude female figure draped in a veil of some kind. They described the interpretation as suggesting, "Rapunzel? Princess and the Frog? What fairytales do you think this is an idea of?" But they went on to contrast their ideas with the ideas encouraged by the interpretation. They said, "I didn't really think of fairytales like Rapunzel when I looked at it. I thought of a woman being veiled… like she was just trying to barely lift the veil of being silenced. It wasn't a fairytale."

Many other participants made connections to the world that were unprompted by either exhibits or interpretation. Connections to political or social violence were the most common connections. For example, one individual was looking at a gallery of ancient weapons and made this connection: "It wasn't an AK-47, but it was sharp knives and there was this painting with a spear going through somebody…It's right at the forefront of our minds, particularly as school teachers." Another participant described a moment looking at an abstract work of art with "intricate architectural schemata [underneath] a lot of paint and gestural-type drawings that symbolized people or explosions." They said, "I thought about political violence… It just reminded me of things that are happening in cities where I don't live, like the Middle East for example." Another spoke about making connections with a Degas painting of a slaughter of women as a result of a civil war or a medieval battle:

> "It made me think of this abuse toward women through generations of war and how they experience it. You know, people talk about saving the innocent people and everything, but it's always the same people. It's always same people that aren't starting the war, or in the war, who are being slaughtered."

Other participants made connections to women's issues more broadly, to religious issues, or to general societal inequities.

b. I made connections between my own life and an artwork

Participants made varied connections between their own life and works for art. Some focused on personal past memories of their family, their childhood, or their upbringing. For example, one individual described connecting Asian and African artwork to their multicultural upbringing: "It reminded me of home. The Buddhist section was cool because I remember going to a Buddhist temple when I was little…It reminded me of how multicultural it is back in Vancouver." Another individual described a moment engaging with textile artwork, saying, "When I was little, me and my family, we'd like to make blanket forts…it just kind of reminded me of being little and sitting with them on one of the bean bags, like sitting under the blankets." Another participant reflected on a painting of a blacksmith in Appalachia to their own upbringing. They said, "Where I grew up was a much more rural place, kind of like Appalachia. I'm from Wisconsin, but a very poor area… so when you're there, if that's all you know, then the guy with the anvil looks pretty great. But if he was here, you might say he's not doing so great."

Other individuals made connections between artwork and their own personal jobs or hobbies. One individual spoke of their experience as a psychologist looking at a work of art by Yayoi Kusama: "I was thinking about the artist, and that she's in Japan. Suffering. And that I could fix her psychiatric problem. But then I was thinking, would she still be creative? I'm curious about that. Many artists I think, probably have some type of mood disorder." Another participant described their reaction to an architectural sculpture: "It just put me back in the studio, and remembering building sculptures. Nothing close to that sort, but it was just a beautiful, reflective moment for me." For another individual, looking at a painting of a union strike resonated with them: "I'm a working union member in the electrical union. Even though

I've never experienced a strike, or any of those things, just to know that here I am a part of an

organization that has that history."

Other individuals made connections that related to societal roles, identity, or just

generally drawing inspiration for their own artmaking. One individual found connections

between the work of Toulouse Lautrec and their own personal identity. They said, "He likes the

fringes of society, and for me, I'm not in the middle of the bell curve. I prefer to be at one of the

tail ends. So, for me, that was something I thought about when I was looking at that work."

Another described their role in society in relation to indigenous/native peoples: "I was thinking

about myself in that timeline as a settler and as someone who is contributing to destruction, and

responsible for the destruction of their ancestors."

c. I found visual evidence in an artwork to support my ideas about what was happening

In order to understand what was happening in a work of art, many individuals looked for

recognizable imagery or just looked closely for small details. One individual described their

process:

> "If you really point out little bits that are happening in the painting, they
> [children] will start to understand that it is actually a story versus just
> imagery…There are things and images like the computer and more current things
> happening. So, it forced me to go back and revisit the imagery to see what it was
> really representative of, and if I could tie a real historic event to the images."

Another reflected on their process deciphering which religious figure they were looking

at when they said, "You have to kind of dive into exactly what's going on… so you're looking at

all those things and piecing it together. Who is this person? Then you realize with all that

combined, it is Jesus. When you initially see it, it's just a big statuesque person. But when you

investigate those smaller details, you can figure it out."

Several participants constructed narratives or identified themes they saw in works of art, about a range of types and styles of artwork. One individual was particularly pulled by the symbolism they could find in older works of art. They described their thinking looking at a series of sculptures from Hindu culture: "Why does this guy have an elephant head and a regular body?... They all have different stories…His father cut his head off and his mom got really sad, so she stuck an elephant head on his body…With some of these sculptures, you have to look because each part has a meaning." Another individual found themselves noticing movement in a series of artworks in the museum. They said, "there's several paintings in there about movement. And without reading what it told me to do, I found myself trying to find the movement… and even on into Chihuly. The Chihuly stuff has a lot of movement too."

Some participants engaged in finding visual evidence to identify formal aspects of what they were looking at such as one participant who said, "There's one with a mess of lines and circles on one side and then the other side has more color, and you could kind of make out that it was a woman." Other individuals sought to pick apart what they were seeing in order to place it in some kind of context. For example, one individual said, "there was one painting we spent a lot of time on… trying to figure out is that based on a real place, or is this an actual event? Is this an event that they created?"

d. I considered multiple perspectives or opinions

For many participants, visiting the museum with a companion allowed them to think about new perspectives by comparing their own perspective with those of others in their social group. For example, one participant shared, "My mom thinks totally differently than I do. So, she is just like, 'What about this?'...Through discussing that together, you do see art from different

perspectives." Another said, "Just talking with my friend here. We view it differently because we come from different backgrounds."

Other individuals reflected on how their exhibit experience helped them build cultural or religious understanding. When looking at a Native American artwork, one individual said, "I was thinking about how they're different, and how different their culture perspective is from mine, and how it's changed over time." Another reflected on artwork expanding their religious perspectives: "I grew up learning about and knowing about Ganesh, but I'd never seen it from the perspective of different cultures. So, to see it from the Nepali culture, or the Cambodian culture, or the Buddhist culture was very interesting."

Other individuals thought of perspectives as they connected to the physical artwork and the artist. For instance, some considered perspective as a principle of art and said things such as,

> "The more I look at [an artwork] the more it transforms sometimes. There's a sculpture in the European gallery that's supposed to be of a female form, but when you look at it, it casts shadows. One of the shadows is extremely female, but the other shadow looks more male."

Others identified the perspective of the artist, so what the artist was thinking or feeling when they created the work of art. And others thought about the many perspectives that go into deciding whether or not something is considered "good art." For example, one individual asked their companion, "Who decides what is art?" They went on to say, "I can appreciate that they *clearly* have a different vision than me, and a different opinion on that, but I'm not getting that connection. So I was considering that perspective of, 'Okay, what is someone else seeing in this that I'm clearly not?'"

e. I transformed my initial ideas about an artwork after talking about it with someone else,

reading about it by myself, or carefully considering it

Many participants described utilizing interpretation such as wall text to confirm or rebuke

their ideas about what they thought they were looking at. For example, one individual said that

they had one idea about what an artwork might be about, but then they read the description and

realized that "I was completely wrong." Another described how an abstract work of art seemed

confusing or not impressive: "Before I was just like, 'It's pants on a table', and I thought what is

the point of this…Then I looked at the description and read it and I started thinking, 'Oh, okay. I

see that I guess.'" Some also noted that their ideas changed after they spoke with docents or

experts. For instance, one individual described the process of learning about the history behind a

landscape painting: "I thought...eh...more landscape stuff." But after talking with a docent about

it, they said, "It had this really great backstory, that if that guy wasn't there, we would have just

thought it was a boring landscape painting, you know? It was really cool." For others, their

attitude or perception changed after not only engaging with experts, but also through engaging

with their social companions. One person described a Nick Cave work of art saying,

> "I was like, 'Oh this is really weird and does not speak to me personally.' But
> they were all like, 'I love how intricate it is, and detailed.' And I was like, 'Okay,
> I can see that'… I just didn't really love it. But after hearing you guys talk about
> it, I was able to appreciate it more."

Some individuals transformed their ideas as they were deciphering the formal aspects of

the work, particularly medium, or just determining what the subject was. For example, one

individual described their idea transformation in the Kusama exhibit when they said, "Honestly, I

didn't realize it was objects. I had been thinking it was a painting. I didn't realize I could have

touched them…I thought it was in the mirrors or something." Another described the formal

aspects of seeing a famous painting, like the Last Supper, in many different iterations: "It was

interesting just to see how his take on this famous painting and just how he did it over and over

in different ways." They went on to discuss how seeing that exhibit changed the prior knowledge

that they had: "That was something I never really thought about. What if Jesus is black? Or what

if Jesus is nothing that we think of? It was kind of a fun way of taking this famous painting and

just changing ideas about it."

f. I came up with many ideas about what an artwork might be about, but then decided on one I

thought was best

When participants engaged in the process of taking many ideas about a work of art and

determining what they thought the best idea might be, many of them described a process that

involved close looking and identification of the subject of the artwork. For instance, one

participant recalled looking at an artwork called *Yellow Rain Jacket*:

> "It's just a big picture of a horse with a prize saddle on it, and it was about a rodeo
> jumper or something. The yellow rain jacket is tucked away at the back of the
> saddle, even though it's called *Yellow Rain Jacket*…So, I thought, 'Where am I
> supposed to be seeing that?' Then I saw it almost completely underneath the
> saddle."

Another described the process of looking at a contemporary work of art of a nude form. Based on

the perspective of the painting, it took them a little while to figure out what exactly they were

looking at, but then they made a discovery after looking closely:

> "The way it was, I finally figured out that it was a man's arms…I was finally able
> to gain perspective. And then I realized that they were two left hands. He had two
> left arms. I was so angry at the fact that it wasn't a right arm and a left arm. It's
> been driving me insane."

Others looked at interpretation for answers to what they were thinking. For example, one

individual said, "I come up with guesses and try to guess to see what it is, because I don't really

understand abstract art. So, I try to see, what the artist was trying to show before I read about it."

Another described reading the interpretation and determining if "either we were right or wrong."

A smaller number of people constructed narratives or hypotheses while looking at works of art. One individual reflected on their process of looking at a city made of Legos, and thinking it might be the city where they lived, but that they were "figuring out which buildings looked familiar because it's a crazy scene." But then they were able to notice buildings that were recognizable to the city. They said, "I had originally thought it was supposed to be [here], but then I was like, 'Maybe it's just a compilation of random Lego structures.' But as we progressed through it and got to the end, we started seeing recognizable buildings and I thought, 'Oh it is supposed to be [here].'" Another individual described how they had many ideas about an unknown figure in a painting:

> "Some of my other ideas were that it was someone she did not like, but didn't want to reveal who it was, like a mistress? An enemy? Or a representation of her own self, being naked and being exposed and feeling vulnerable, obviously not wanting to reveal her face. So, I had multiple thoughts about how this mysterious woman in the picture with her face painted over was…I decided it was probably somebody close to her."

RQ3. In what ways, and to what extent do adult visitors consider creative thinking an important component of their art museum exhibit experience?

The purpose of the art museum

Study participants were asked to respond to the question, "Drawing from your experiences here at this museum, what do you think the purpose of the art museum might be?"

Responses were coded into 7 emergent categories: 1) new perspectives/ways of thinking; 2) education and learning; 3) display art; 4) make art accessible to the public; 5) recharge or escape from reality; 6) contribute to societal good; and 7) other. The purpose of this question was to determine whether visitors implicitly or explicitly mentioned aspects of creative thinking as inherent in the purpose of the art museum. For many participants, creative thinking was implicit in their descriptions, particularly when they spoke about new perspectives/ways of thinking and

education and learning. Creativity was most frequently mentioned explicitly when participants

spoke about museums' responsibility to display artwork and be accessible to the general public.

New perspectives/ways of thinking. Sixty-eight percent (n=33) of study participants

described the purpose of the museum as promoting new perspectives and/or ways of thinking

broadly. For some of these people, art museums were as places that challenge people to think

differently or critically. One individual explained, "I think art museums exist to give people a

space to think about something they don't normally think about," while another described it as a

place that "promotes thinking." One participant described the purposeful intentions of the

museum and the actions it takes to challenge visitor thinking:

> "Whether or not it's by purpose or design, I think in actuality…whoever's
> running and directing this museum has definitely created this space to be an
> engaging area to challenge people's perspectives, and to bring together a
> community of different art mediums and opinions."

Other participants described ways they consider cultures in new ways in art museums:

> "Art challenges you to think- not only culturally, but in a broader perspective of
> how we're all really connected, and we can all live in the same world and feel
> things. The way somebody puts [that] into art might challenge you to think
> differently about that culture, or that experience."

> Some participants identified understanding the way artists think as important to how they

consider new perspectives and ways of thinking. One participant described the importance of this

role in art museums within their own identity as an art maker when they said,

> "I get in these creative ruts. Lately I haven't really been making anything. So,
> walking through the museum has been really interesting, and has allowed me to
> draw on other people's experiences and stuff like that. It kind of brings more into
> focus what I want to do moving forward, I would say."

A handful of responses within this thematic code centered around the museum existing to

promote conversation and promote creativity. Combined, they made up about a quarter of the

responses within this thematic code. These responses tended to echo the content and tone of this

participant's response: "[The art museum] is a place for like-minded people to meet and talk and explore. Have a dialogue, whether it's related to art or politics or whatever. It's a hub." To a lesser degree, participants also mentioned the art museum as a place that fosters creativity. One participant described art museums as places that "give people a space to think creatively," while another suggested that art museums exist to "spread creativity, and spread the vastness of creativity, because in this one space there are five or six exhibits, and all of them are totally different from each other."

Art museums are places that promote education and learning. Forty-six percent of participants (n=24) felt the purpose of the art museum was to provide opportunities for learning and education. Many of these respondents described the educational role of art museums in terms of exposure to different cultures. For example, one participant said, "For [my child], [it's] to expand that area that she hasn't seen in art…and at least with this exhibit, there's some Native American exhibits, which is cool because you get to learn about people and how people used to live, and different cultures." Another participant described the importance of cultural exposure saying,

> "For me, I think culture and education…I think that people have to leave with a sense of gaining knowledge about something. It might have sparked a creative thought or something like that, but at the same time you didn't really learn about who painted it, why they painted it, and the culture behind it- you know, what's going on. That just kind of brings it all together."

For other participants, historical learning was a key part of what it means to be an art museum. These participants' examples centered around art depicting times in history and historical context. For example, one participant said, "I think that art is like a form of history, and it reflects society. I think you can learn a lot about the era in which the art was created just from looking at it." Another echoed this perspective, saying, "I think I look at it from a historical

perspective. A lot of what's in here is capturing and recording our history, and the history of human beings [as a whole]. Yet another participant said that learning about history in the art museum better informed their present:

> "I think in terms of history, it's where we've come from and where we've been. A lot of people are curious, especially in the arts, to understand how we got to the place we are now...you know, looking back and seeing the advancements and how times change."

Art museums exist to showcase and display art and artists. Forty-six percent of participants (n=24) also felt the purpose of the art museum was to display artwork and showcase artists. These responses typically centered around the actual hanging and display of artwork, rather than acknowledging the diversity of styles or makers. One participant described this purpose as, "to showcase people's expressive ideas, or expression of a specific idea maybe. It's a place to see beautiful things." Another described the museum as a place "to display people's creativity, their art- what they've created."

Other respondents really considered the art museum a place whose purpose was to showcase diversity through the styles and origins of physical artwork they display, but also the diversity of artists and art makers. When speaking about the diversity of art styles and origins several participants described the wide range of exhibit content. For example, one participant said, "... in this one space there are five or six exhibits and all of them are totally different from each other, yet, all of them are art in some way and all of them are trying to spread…ideas to reach the masses." Another response echoed the range of content, saying, "each little exhibit is like a chunk of time."

For some participants, showcasing the diversity of the art maker was just as important as showcasing the diversity of the origins of artworks. One participant noted that it was important to show "that it's not just stuffy old white men doing art. It's women and people of different

cultures and stuff. So that's always cool to see that. That anyone can be creative, and anyone can be an artist." Another noted the expansion of artist identities in contemporary art making versus in the past: "There's so many more people now that have the ability to make art, when before they were never allowed to because of their gender or who they were born as."

Art museums are places that make art accessible to the general public. Twenty-five percent of study participants (n=13) described art museums as places to make art accessible to the public. For example, one participant described the museum as a resource, saying that art museums exist "...to provide the experience for the general public to experience culture. I would never be able to see this stuff on a normal basis, so I feel very lucky to have a resource like this open." Some respondents described museums as places that not only make artwork accessible for them here and now, but for future generations as well. For example, one described the museum's purpose as,

> "Hopefully not only to inspire, but to help preserve. With all the destructive habits of humans, it's really nice to see that there is a place like this…where preservation is key. You see the preservation of somebody's creativity from a thousand years ago, a hundred years ago, or yesterday. So, it's kind of nice to see that this is almost like a bank of creativity."

Art museums are places to recharge and "escape from reality". Another twenty-five percent of study participants (n=13) described museums as places that exist for enjoyment, inspiration, relaxation, and reflection. One participant described their experience at art museums as "an alternative to what's going on in the real world." They continued to say that the feelings that art museums generate in people "are much better, and they allow the mind to leave those [outside feelings] at the door and [step into] a whole new world. You wanna just pull up a cot, you know?" Another described the art museum as a place for enjoyment for everyone. They said, "This is where people get together… Once you're here it's a safe space… everybody around here is smiling and enjoying themselves. I think it's a place that you can come and expect that to

happen, no matter when [you're here], or who you are." One person described the art museum as existing as a place "to reflect." They went on to elaborate saying that,

> "… it's a realization of maybe where you're at. I can go into the same museum a bunch of different times and always see something differently, depending on the state I'm in… it may be colors one day, or intricate designs another day. That's what changes, and I think that's how it makes you reflect on where you're at at that time in your life."

Art museums are intrinsic to society/economies. For ten percent (n=5) of participants, art museums exist to serve society or the economy more broadly. For one individual, the purpose of art museums centered around the idea that we as a society have deemed art important and meaningful: "I'm not sure why it is, but I enjoy it, and we've decided that art is important to us…We have museums to preserve art and educate, but the bigger question is why is art important?" Another described this question in a different way, saying, "You could say, why do we have restaurants? Why do we have fitness centers? Why do we have movie theaters? We need these things, plain and simple. They're a part of life." For others, the purpose of the museum centered around the value it added to its local economy. One individual described it as, "it's in the heart of all the other touristy things to do. It's good to have a nice museum here as well… it brings new things to the city."

The role of art museums in fostering creativity

Participants were asked to rate their agreement with three statements about the role of art museums in fostering creativity. Table 4 shows participants' average ratings for these statements.[1]

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[1] The following statements in Table 4 and Table 5 were adapted from a previous creativity evaluation study at the Denver Art Museum (Fischer & Munley, 2014).

Table 4: Participants' average means indicating their agreement with statements regarding the role of art museums in fostering creativity (scale of 1-5 where 1=strongly disagree and 5=strongly agree)

Statement	Mean
The "research site name" celebrates the creative efforts and accomplishments of *well-known artists*. (N=52)	4.0
The "research site name" celebrates the creative efforts and accomplishments of *local artists.* (N=52)	3.7
The "research site name" celebrates the creative efforts and accomplishments of *those who are not artists.* (N=51)	3.4

Study participants were also asked to rate their agreement with two statements about the

museum's role in fostering individual creativity. Table 5 shows average ratings for these

statements.

Table 5: Participants' average means indicating their agreement with statements regarding the museum's role in fostering individual creativity (scale of 1-5 where 1=strongly disagree and 5=strongly agree)

Statement	Mean
The "research site name" is a place where I can get ideas and make connections that spark my own creativity. (n=52)	4.5
The "research site name" is a place where I can be creative. (n=51)	4.2

The actions most valued in an art museum experience

Study participants were asked to rate their agreement with three statements about the

value of creative thinking in their art museum experience. Table 6 shows participants' average

ratings for these statements.

Table 6: Participants' average means indicating their agreement with statements regarding the value of creative thinking in their art museum experience (scale of 1-5 where 1=strongly disagree and 5=strongly agree)

Statement	Mean
When I visit an art museum, it is important to me that **I** feel curious or want to learn more about something. (n=51)	4.6
When I visit an art museum, it is important to me that **I** use my imagination. (n=52)	4.5
When I visit an art museum, it is important to me that **I** feel challenged to think critically. (n=52)	4.3

In addition, participants were asked to identify which actions were most important for them during their art museum visit, from the 17 actions (6 idea generation-based, 6 creative thinking-based, and 5 general outcomes) they had tagged as happening or not happening for them during their visit that day. Table 7 shows the frequency with which each of the 17 actions was selected by participants in their top 3.

Table 7: Frequency with which each action was selected as part of participants' top 3 most important actions in an art museum (N=50)

Action	Total # of times action was selected in top #3
General Outcome	**76**
I felt inspired by an artwork	20
I had fun	19
I talked about a work of art with someone	17
I learned new facts and information about an artist or artwork	15
I felt relaxed in a gallery	5
Idea Generation / Curiosity	**41**
I used my imagination	16
I was curious about how an artist made an artwork	9
I thought of an idea that I hadn't thought of before	6
I was curious about what an artwork was about	4
I came up with many ideas about what an artwork might be about	4
I had or asked questions about an artwork	2
Critical Thinking	**35**
I made connections between my own life and an artwork	12
Looking at an artwork reminded me of something happening in the world today	10
I considered multiple perspectives or opinions	7
I transformed my initial ideas about an artwork after talking about it with someone, reading about it, or carefully considering it	3
I found visual evidence in an artwork to support my ideas about what was happening	3
I came up with many ideas about what an artwork might be about, but then decided on one I thought was best	0

While participants selected general museum actions far more frequently than either idea generation/curiosity actions or creative thinking actions, 88% of all participants (n=44) selected *at least one* creative thinking action in their top 3. Participants were asked to explain the rationale for those actions that they valued the most as part of their art museum experience. Responses were coded into 7 emergent categories: 1) self-development; 2) new perspectives; 3) learning about the life or process of the artist; 4) personal art making; 5) current issues; 6) social nature of the visit; and 7) historical context.

Self-development. Fifty-six percent of participants (n=28) described their most valued art museum experiences in ways that centered around their own self and development. Examples included participants making personal connections with artwork, reflecting or rejuvenating in the museum, or acknowledging the multiple ways they can engage with art in the museum. Several participants described the ways museums support their personal learning styles. One participant described the ways the museum allowed them to learn and engage in a more physical way:

> "I love that it engages my imagination. If I look around and it's all just really boring art- that's subjective- but if it's boring for me, then it's not something I'm going to be interested in. Sometimes having fun with something that is more tangible, that you can look at, you can touch. That's what keeps it engaging and keeps it more interesting for me…Things that engage my senses are the most interesting. Somewhere like [here] has so many different kinds of art that you can really customize it to your interests. Even if you don't really like art you can find something interesting."

Another participant shared the ways they use their imagination to engage with artwork and ideas in the museum: "I think that in every single piece of art I look at, I'm using my imagination, which is a two-way interaction. I'm not just being passive, I'm being active. So I'm having a dialogue with the art…It's looking within, but also looking out." For some individuals, making

personal connections with artwork is essential to how they incorporate their museum experience

into long-term learning:

> "Making personal connections with a work of art brings art to a more personal
> connection, so it's not just a piece of art on the wall where you read it and then
> move on. I think this is how you internalize it…You make the connections to
> yourself, and I think that's how you learn new things."

New perspectives. Thirty-two percent of participants (n=16) valued most the art

museum's role in expanding or introducing new perspectives. This could be from interacting

with a museum interpretive, the artwork itself, or another individual. For example, one

participant shared that their art museum experience allowed them to think differently: "I like to

be able to go home and know it made me think of something in a different way." Another

participant shared the value of cultural artwork and artifacts to broaden perspectives and consider

new ideas: "Just talking about different cultures and seeing things with new eyes- so different

opinions, different perspectives. Not staying in a concrete bubble that you're not going to look

outside of." Other participants especially mentioned the role that their social companion plays in

helping them notice and understand new perspectives during their visit. For example, one

participant described the value of their social experience saying, "Talking to someone about the

art opens you to more ideas. It opens you to more thoughts and connections throughout the

world. I think that's what art is all about."

Learning about the life or process of the artist. Twenty percent of participants (n=10)

described their most valued museum experiences as discovering and learning facts and

information about the lives of artists, including their inspiration, their media, and/or their general

artistic process. For these participants, the life and process of the artist added value to their

experience of artwork. One participant said, "Learning about an artist's life, or how a work of art

was made really influences the importance of it, so that it's not just pigment on a canvas. I think

it ups the importance of it." Other participants identified how illuminating the artist's thinking

process was valuable to how they think about artwork. For example, one participant said:

> "Going to an art museum always just makes me think, 'how in the heck did you
> go from an idea to that?' So one, how did you come up with the idea, and two
> how did you manifest the idea. Then from that information, I can have an idea of
> what that creative process was."

Personal art making. Sixteen percent of participants (n=8) described their most valued

art museum experiences as primarily aiding or enhancing their personal artmaking practice

outside of the museum. These participants identified seeing more technical aspects of artmaking

as what was most valuable for them. One participant explained their thinking best by saying,

> "Being an artist who is still exploring different things to paint and different
> mediums to use, it really helps me when I look at what somebody else has done
> and maybe the brush techniques that they used or what medium on what kind of
> canvas they used. I think, 'Well this worked really well for them, so I don't see
> why it wouldn't work well for me.'"

Current issues. Fourteen percent of participants (n=7) described their most valued art

museum experiences as relating to their world, current events, or social issues still prevalent in

today's society. One individual shared how their art museum experience allowed them to think

about current issues in ways they hadn't previously considered: "I think that's what I look for in

art. It's something that connects me to what's going on around me, but also might show me

something that is happening that I'm not seeing." Another participant shared how their personal

interest in current events helped them connect to what they were seeing in the museum:

> "I kind of like staying on point with social trends and political stuff. When I see
> expressions, even when they're older, those things are still happening today.
> They're still modern struggles, maybe not as poignant as what created the art
> originally. I just kinda like that deep thought of other social contrasts that happen
> and maybe how we can kind of balance everything in the future."

Social nature of the visit. Another fourteen percent of participants (n=7) identified the

social nature of their museum visit as most important. This could include coming with a friend,

family, or for some kind of special occasion with another individual. Many individuals made

general statements about the museum as a place for social interaction. One participant shared,

"He's my best friend and we do stuff like this all the time, but also I think that it should be a

communal, social thing. I do it by myself, but it's not as enjoyable." Some individuals spoke of

the value of sharing ideas with others during their visit. For example, one individual said,

> "I get really excited whenever I discover something about a piece of art. Like, I really want to show that to someone and be like, 'Look at this! Look at this little detail in here, or what this artist decided to do.' I've always found in my life that when I discover something, I really want to share it with somebody. I really want to share that experience because I enjoy it. I want them to enjoy it."

Historical context. Twelve percent of participants (n=6) described their most valued art

museum experiences as adding to their historical knowledge, or being interested in learning

about historical context surrounding works of art. These individuals considered the ways artwork

can illuminate history, and their personal interest in history. One individual best conveyed this

theme by saying, "When I go and see things, I want to know all the circumstances about it, like

the time period…the Brooklyn scene, the Native American scene, the Quaker painting, it just

grabs my interest and makes me want to know more about what was happening at the time."

Chapter 5: Conclusions and Implications

The purpose of this study was to better understand visitors' perceptions of the role art museum exhibits can play in promoting and fostering creative thinking. In order to more fully understand the breadth and depth of perception, three components of perception were examined: (1) How visitors define and differentiate creativity and creative thinking; (2) In what ways, and to what extent, visitors describe engaging in creative thinking skills during their exhibit experiences, and (3) In what ways, and to what extent visitors consider creative thinking as an important component of their art museum experience. To accomplish this task, semi-structured interviews were conducted with 52 adult participants at three art museums in the U.S. that have identified creativity and creative thinking as core components of their educational mission. All participants were casual museum visitors who had explored at least one exhibit.

The findings of this study contribute to a collective understanding of how adult visitors naturally engage in creative thinking during their art museum experiences, which may inform how museum professionals think about, and intentionally plan for, creative experiences within a visitor-centered museum context. Further, this study also begins to bridge the gap between the abundance of existing creativity literature and the lack of creativity literature that is specific to museum practice, despite the growing emphasis across the field on visitor experience and visitor learning.

Participants generally define creativity broadly, but place distinctions or limitations around what it means to be creative

Participants defined creativity in a multitude of different ways, with nearly half of the sample defining creativity as involving a broad range of criteria, from personal expression involving feelings and emotions, to cognitive forms of creativity involving critical thinking skills

and idea generation, to the creation of tangible products of some kind. Only a handful of participants exclusively described creativity in terms of artmaking. Additionally, many participants identified the need for newness or originality, or connected creativity to occurring through existing constraints such as prior knowledge or available resources.

Participants' broad definitions closely connect to the existing literature regarding creativity, where, fairly universally, creativity has been defined as products or ideas that are both novel (or original, or new) and useful (or valuable, or meaningful, or appropriate) (Catterall, 2015; Csikszentmihalyi, 2013; Guilford, 1950; Hennessey & Amabile, 2010; Mumford, Baughman, & Sager, 2003; Perry & Karpova, 2017; Piffer, 2012; Plucker, et al., 2004; Richards, 2007; Runco, 2003a; Runco & Jaeger, 2012; Stein, 1953; Sternberg, 2006; Torrance, 1963). Although participants were asked to define creativity in an art museum, arguably brimming with examples of what Csikszentmihalyi (2013) would name Big-C or eminent creativity, the majority of participants defined creativity in terms of everyday, or little-c creativity.

For study participants, creativity more closely reflected the factors that play into everyday creativity, including affect and emotion, cognitive processes, and to some extent, environmental or social forces that produce a creative idea or product (Baer, 2003; Basadur, Runco, & Vega, 2000; Guilford, 1958; Kaufman & Beghetto, 2009; Rhodes, 1961; Torrance, 1963). Unlike much of the creativity literature, however, study participants were more likely to emphasize the emotional or affective connection they felt characterized creativity, especially creativity as it plays into how people express themselves in ways that are personally meaningful. However, these descriptions may best support the work of Kaufman and Beghetto (2009), who define a subset of everyday creativity, which they term mini-c creativity, as the subjective, personal, or emotional moments of creativity.

While art museum visitors, for the most part, did not associate creativity with art, there seems to be a disconnect between the ways most participants think broadly about creativity, and how they differentiate being creative and thinking creatively. Despite study participants defining creativity broadly, the majority made clear distinctions between thinking creatively and being creative, with their rationale most often necessitating an outward execution, action, or skill (that they may or may not possess) to be creative. This distinction undercuts the literature of everyday creativity and creative potential, that states that every person has the ability to be creative within a broad set of internal and external variables (personality, cognition, environment, etc.) (Guilford, 1966; Runco & Acar, 2012, Piffer, 2012).

Participants actively engage in a wide range of rich creative thinking experiences in art museum exhibits

All participants reported engaging in at least one aspect of creative thinking, and many could provide rich examples of multiple creative thinking actions, from their gallery visit. Participants especially reported engaging in actions that support idea generation-feeling curious and using their imagination while engaging with artwork. Participants were least likely to report engaging in aspects of creative thinking that involved critical thinking skills such as evaluative thinking. However, two thirds of the sample reported that they made connections between what they were seeing and events or topics that are relevant outside the museum environment. It may be that visitors struggled to identify their cognitive thought process for some of the more critical thinking aspects of creative thinking, rather than that they did not happen. Future studies may explore the ways in which casual museum visits impact these aspects of creative thinking in a more robust manner.

Results from this study contribute significantly to the existing body of literature surrounding creativity development specific to the work of museums. A study conducted by the Denver Art Museum specifically explored creativity and their visitors (Fischer & Munley, 2014). While it set the stage for this study by exploring visitor perceptions of creativity, their study focused on identifying creativity impacts from a year's worth of exhibit-specific programming. This study seeks to complement that work by exploring the ways in which visitors think about and engage in creativity and creative thinking in casual, non-programmed visits.

This study begins to close the expansive gap between creativity research as a whole, and creativity research that is specific to the ways in which people engage in creative thinking in museums. While the Denver study looks broadly at creativity and how the museum contributes to a creative community both inside and outside the museum, this study found that participants were engaging in specific aspects of creative thinking during their gallery experiences at all three research sites, which in several cases, was unsolicited by interpretation or wall text. Further, participants were able to be self-reflective and identify specific instances where they felt they were most engaged in creative thinking during their gallery experiences. The findings of this study, along with the work of the Denver Art Museum's study set the stage for research that explores measurement of creative thinking in gallery spaces as well as exploration as to how best support a range of creative thinking behaviors for adult gallery visitors.

Participants value creative thinking in their personal art museum experiences

While study participants identified the art museum's role in exhibiting artwork and artists, they were more likely to consider the museum a place that promotes education and learning, helps them make connections, and encourages them to form new perspectives and ways of thinking. This finding supports the research that has been done from the museum field's

perspective- that as a whole, museums have evolved from being solely focused on collections and preservation, to existing as places that emphasize the visitor, their learning, and serving their needs within the community in which the museum exists (Hirzy, 1992; Korn, 2007a; Mayer, 1998; Weil, 2002).

Study participants also reported high degrees of personal value around their own creative thinking engagement during their gallery experiences. While general behaviors like feeling inspired and having fun are routinely considered most important to participants' museum experiences, aspects of creative thinking are also particularly salient for visitors as they reflect on what they value about art museum experiences. Participants particularly value aspects of their gallery experiences that allow them to feel curious, make connections, and use their imagination.

Further, participants' explanations of what they value most about their experiences also reveal aspects of creative thinking that they may not have specifically identified. When participants expanded on describing what they think is important for them, they talked about ways the art museum promotes active engagement with their own learning and provides opportunities for them to make connections and consider new perspectives either presented in the artwork or interpretation or those of their social group. This indicates that while visitors value thinking creatively, they may be less likely to self-identify their values as such.

For these sites who have placed some stake in the ground around creativity, it may be that adult visitors are more tuned into the ways in which these museums prioritize visitor learning and creativity. The small amount of existing literature on current public perceptions of art museums suggests that people have strong emotional attachments to museums as places that support culture in their community, but that many people still may have lingering negative personal perceptions about the museum that act as barriers for their attendance (BritainThinks,

2013; Mason & McCarthy, 2006; Stylianou-Lambert, 2011; Yocco et al., 2009). Further research

should be done to determine if these findings are indicative of a shift in the ways in which the

public is reconsidering their historic negative perceptions of art museums, or if these findings are

directly representative of these museums' shift towards creativity-centric educational missions.

Implications

Implications for Practice

This research suggests that adult visitors to art museums are not only engaging in creative

thinking during their gallery experiences, but that on the whole, this is something that they

expect and value out of their museum experiences, regardless of whether it is a part of

programming and interpretation, or not. As museums and museum practitioners answer the call

for increased emphasis on what it means to be a visitor-centered museum in the 21st century, this

study leaves ample room to explore ways to further cultivate these 21st century skills throughout

the museum, and not just in educational programs. Further, this study may contradict

assumptions that people think about creativity in a way that is limited to artistic ability. It may be

that reframing conversations towards celebrating thinking creatively versus being creative may

further resonate with adult visitors in their day-to-day lives.

Implications for Future Research

This research, along with Denver Art Museum's 2014 study, *Tapping into Creativity and*

Becoming Part of Something Bigger, only begins to explore the ways creativity manifests in the

art museum setting. This study focused on identifying visitor perceptions of creativity in the art

museum at institutions that had made concerted efforts to place creativity at the center of their

educational mission for many years, so it is not known whether these findings are a result of

these museums' work, or if these findings apply more broadly to the ways in which adults

engage with art museums generally. This study would be strengthened by expanding its scope to include institutions that do not explicitly emphasize cultivating creativity in their educational missions.

Further, the methodology and design of this study relied on visitor self-reporting, which has been used to reliably measure creativity (Kaufman et al., 2008), but some aspects of creativity and creative thinking, especially aspects of critical thinking that play into creative thinking may be better measured with another assessment measure. Another limitation to fully understanding the nature of visitors' creative experiences in the art museum surrounds the broad nature of creativity and the limited scope of this study. Creativity is multi-dimensional, and includes social, personality, environmental, and affective factors in addition to cognitive factors such as idea generation and aspects of critical thinking (Catterall, 2015; Kaufman & Beghetto, 2009; Rhodes, 1961; Runco, 2003a). This study primarily focused on visitors' self-reports of cognitive aspects of creativity. Further studies should explore the impact art museum experiences have on these broader dimensions of creativity development in art museum visitors.

Additionally, this study and the Denver Art Museum study explored creativity and creative thinking in adults, however, many visitors to art museums experience the museum in intergenerational groups. Further studies should explore the ways multiple generations and group visitation structures engage in creative thinking, both separately and as a group engaging in learning together. Many participants in this study made comments regarding the ways certain areas of the museum impacted different aspects of their creative thinking; additional studies should examine these statements more fully and explore the relationships between exhibit content and interpretive strategies and the forms of creative thinking most impacted.

Final Thoughts

Creative thinking, along with other 21st century skills identified in IMLS' 2007 report,

Museums, Libraries, and 21st Century Skills, are powerful tools to think about ways museums

may broadly impact visitor learning, both inside and outside of the museum. However, much of

the focus on museum learning centers on how museums function as learning institutions for

school age children through field trips and specialized programming, when in fact the learning

that happens in museums has lasting impacts that are far broader in nature than the classroom.

Creative thinkers are people at any age who actively engage in using their imagination and

critical thinking skills to make meaning in their world. The findings in this study demonstrate

that adult visitors not only engage in creative thinking during their gallery experiences, but that

for many, those experiences are the root of what they value most in their experiences. If

museums are indeed examining 21st century learning and creative thinking as ways to deepen

visitor engagement, there is a lot of potential to leverage these results into intentionally

supporting creative thinking skill development in gallery spaces, and throughout the museum.

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Appendix

Interview Guide

Cultivating Creativity: Understanding Visitor Perceptions of Creativity in Art Museum Exhibits

Hi my name is Jenny Fisher and I am a graduate student at the University of Washington in Seattle. For my thesis I'm exploring how visitors like you think about creativity in their gallery experiences. I could really use your help. Would you be willing to chat with me? It will only take about ten minutes, and at the end of our conversation you will have the opportunity to enter a drawing to win an Amazon gift card.

Okay, great! Is it okay that I record our conversation? I will be the only one to hear it, and while I may use quotes in my research, your identity will remain completely confidential. Your participation is completely voluntary, and I really appreciate it, but I also want to let you know that you may leave at any time without any consequences or repercussions.

So, to begin I'd like to know a little bit about how you think about creativity generally.

1. Take a moment and think broadly about the word "creativity." In a few words, what does it mean to you?
   a. Probe- What does it look like when you're being creative? What are you doing?
2. So we've talked a little bit about creativity, and what it means for you to "be creative." Now think about what it means for you to "think creatively." Do those have different meanings for you?
   a. Probe- Can you tell me more about that?

The next few questions are about the art museum overall.

3. Why did you decide to visit the museum today?
   a. If they say, it's free/something to do/to hang out: There are other places you could've gone to do those things. Why here specifically?
4. Not counting today's visit, how many times have you been to the museum in the last 2 years?
5. So, thinking about those experiences you've had, what do you think is the purpose of an art museum?

      a. Probe- if they say to expose people to culture: what kind of culture? Why does that matter?

      b. Probe- if they say something about collections: Why might an art museum keep collections of artwork? What purpose do they serve?

      c. Probe- if they mention one aspect of art museums only: Can you think of any other reasons we might have art museums?

6. Okay, now think about your experiences in the galleries, not in the café, not in the lobby, only in the galleries with the art. Now, I'm going to give you a stack of cards with some things you might or might not have done while you were in the galleries – look at them and put them into two piles – those you did, and those you didn't do.

      a. *If they say that they did things that are creative thinking cards, pick them out, read them aloud, and ask about their experience with each card:*

           i. Where did this happen for you?

           ii. Can you describe that moment for me?

           iii. What kinds of things did you think about/what did that process look like?

7. Looking at these cards overall, which would you say are most important to you when you visit an art museum? Pick 3.

      a. Why are these most important for you?

Thank you so much. For the last bit of our conversation I have a short questionnaire- it's just a few questions long and should only take a minute. Just circle the extent to which you agree or disagree with the sentence as it relates to "Research Site Name" and your personal museum visit. Don't worry about spending too much time- there's no right or wrong answer, just go with your gut reaction. The back side has a few demographic questions that will help me describe my sample as well as an opportunity to enter a drawing for an Amazon gift card if you would like.

Please circle the extent to which you agree or disagree with the following statements about the "Institution Name".

The "Institution Name" ...

Celebrates creative efforts and accomplishments of <u>well-known artists.</u>

Strongly Disagree   Disagree   Neutral   Agree   Strongly Agree

Celebrates creative efforts and accomplishments of <u>local artists.</u>

Strongly Disagree   Disagree   Neutral   Agree   Strongly Agree

Celebrates creative efforts and accomplishments of <u>those who are not artists.</u>

Strongly Disagree   Disagree   Neutral   Agree   Strongly Agree

Is a place where I can get ideas and make connections that spark my own creativity.

Strongly Disagree   Disagree   Neutral   Agree   Strongly Agree

Is a place where I can be creative.

Strongly Disagree   Disagree   Neutral   Agree   Strongly Agree

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When I visit an art museum…

*It is important to me that **I** use my imagination.*

Strongly Disagree   Disagree   Neutral   Agree   Strongly Agree

*It is important to me that **I** feel curious or want to learn more about something.*

Strongly Disagree   Disagree   Neutral   Agree   Strongly Agree

*It is important that **I** feel challenged to think critically.*

Strongly Disagree   Disagree   Neutral   Agree   Strongly Agree

Please tell me a little about yourself:

| Age
☐ Under 18
☐ 18-24
☐ 25-34
☐ 35-44
☐ 45-54
☐ 55-64
☐ 65 or older
☐ Prefer not to say | **Gender**
☐ Male
☐ Female
☐ Identify differently
☐ Prefer not to say |
| | **Are you a member of the "Institution Name"?**
☐ Yes   ☐ No |

| **If you would like to be entered to win a gift certificate for your time please provide your first name and email below.** |
| **First Name:** |
| **Email:** |

Thank you for participating today
Your input is extremely valuable to my research