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THE ROLE OF MUSEUMS IN EDUCATIONAL PEDAGOGY AND COMMUNITY  
ENGAGEMENT

A Thesis Presented to the Faculty of the College of Education  
in Partial Completion of the Requirements for a Master of Arts Degree

By  
Katie E. Weber

DePaul University  
Chicago, Illinois  
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## **Abstract**

Museums provide exceptional opportunity for experiential and social/emotional learning that often cannot be simulated elsewhere. Schools and communities, however, are not taking full advantage of what these spaces have to offer. Learning science has indicated the need for more progressive education initiatives, making stronger partnerships between museums, schools, and communities imperative. Data was collected through surveys and interviews with museum education departments and K-12 teachers in the Chicagoland area to discuss available programs, usage, outcomes, and feedback for improvement. Analysis of data reiterated the positive role museums play in creating well-rounded, critically-thinking, emotionally intelligent individuals, who are civically engaged and democratically centered. The future of a successful education system and a healthy society rely on the adoption of more active, diverse, and informal pedagogies, as we shift away from traditional test-based, didactic, rote methods. Museums, schools, and communities each have important work to do in order to secure these pivotal partnerships.

*Keywords:* museum education, experiential learning, social learning, community engagement

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## **CHAPTER I: Introduction**

### **Statement of Research Topic**

Growing up in the Chicagoland area, there was no shortage of opportunity to explore a range of museums in nearly any field imaginable, while simultaneously being immersed in diverse cultural experiences. I have always felt a magnetism toward museums—the free-range exploration and interaction with real artifacts and living things that couldn't be experienced anywhere else brought learning to life and created an insatiable curiosity that always left me wanting to explore a topic further. These spaces expanded my worldview in learning traditional school-based skills such as science, history, and art, while also presenting me with real world issues, such as how public policy affects education and communities, and how museums play a vital role in civic engagement. Museums provide people with knowledge and resources to create real change across a host of areas; the wellbeing of a community and the engagement and connectedness of its members can be directly influenced by the programs offered at museums. As one of the most racially and economically diverse cities in the United States, Chicago is in a unique position to offer its students, teachers, and community members world-class educational and cultural experiences.

If used to the fullest extent, museums can create such a positive impact across several aspects of educational pedagogy. Museums offer a richness to student education that traditional classroom methods simply cannot provide; while classroom teachers are certainly able to provide rigorous, well-rounded curriculum and lay the foundational framework for essential skills, museums allow for deeper context and foster the application of such knowledge and skills. “Museums, with their real artifacts, dioramas,



and immersive exhibitions provide a uniquely positive environment to foster learning,” which can both complement and build upon classroom work, notes a study by The Museum Group (Munley, 2012, p. 2). Learning in museums incorporates several pedagogical methods that have been shown to improve student learning and social development as they gain cross-curricular skills such as critical thinking, problem solving, peer collaboration, and historical and cultural empathy, among others. These informal learning experiences are based on constructivist and sociocultural learning theories, as they create opportunities for active, authentic, and inquiry-based learning.

For several reasons, however, the traditional school setting is often void of these opportunities that are provided to students in museum settings—a contributing factor to both the increasing dissatisfaction with the American school system and the substandard scores of American students across nearly all standards in comparison to their peers globally (Stevens et al., 2020, pp. 3-4). Serious reform and new school partnerships are a time-sensitive issue; in David P. Gardner’s (1983) landmark educational report, *A Nation at Risk*, he notes that school failings are largely the result of a flippant disregard for essential skills training such as comprehension, analysis, solving problems, and drawing conclusions. Also to blame could very likely be the cutting of arts and humanities programs while a majority of school funding is funneled toward science and technology courses in accordance with state testing initiatives; “knowledge of the humanities [that so enrich daily life, help maintain civility, and develop a sense of community], must be harnessed to science and technology if the latter are to remain creative and humane, just as the humanities need to be informed by science and technology if they are to remain relevant to the human condition,” writes

Gardner (p.10-11). By underemphasizing these softer courses, we discredit the interdisciplinary nature of the entire education system. Museums have generally evolved to keep up with emerging theories on teaching and learning more so than many schools have, making them invaluable educational sites as they place an emphasis on exactly these skills that experts identify as being mishandled in the traditional school system.

Museum exposure creates immense progress toward historical empathy and tolerance, which may inspire people to become more civically engaged by getting involved in their communities and with its members to spark change. Ealasaid Munro (2013) refers to museums as “spaces of care”, which perfectly encapsulates the broad inclusivity and support that many museums offer to their respective communities via outreach and engagement programs. This outreach is particularly critical in vulnerable communities that may suffer from violence, poverty, underfunded schools, etc. (p. 2). These programs may instill a sense of pride within the community, while providing members with the passion and resources to fight for change within it. These spaces are cultural hubs, and present learners of all different backgrounds with the opportunity to gain new perspectives and skills, and meet new people of diverse backgrounds with which they can develop a network of support that has the potential to build bridges between multiple communities. Museums have the power to give members of a community hope and foster civic engagement, and that positive change can have a snowball effect.

## **Statement of Purpose**

Museums across the city of Chicago offer endless hands-on learning labs, world-famous artifacts, and immersive cultural experiences, while often providing free or discounted rates to students and schools—so why aren't we using them? While many teachers would likely not argue that museums have educational value, there is a blatant disconnect between theory and practice, as many schools are simply not taking full advantage of what specialized programs these education departments have to offer. Even when they are utilized, however, field trips to museums are often perceived as “breaks” from learning, which severely undermines their legitimacy as educational resources. As many schools fail to evolve with burgeoning research on teaching and learning, the opposite is true for many museums; it is therefore worth exploring how to create stronger partnerships between museums and schools, which may address a host of educational and social dilemmas (Hein, 2006, p. 348).

This investigation is being conducted both by and for teachers—if we seriously want to improve educational practices, it is necessary that the conversation begins with those at the forefront. Teachers have long faced the brunt of baseless policy change by political figures or other stakeholders with disregard to their wants and needs as professionals. It's time to start valuing teacher input, and their insight into museum use in schools—or lack thereof—is imperative for creating a dialogue to improve the museum/school relationship. In order to make this transition, we need to know what programs teachers value and what might be holding them back from full engagement.

It is important to also hear from museum educators, as they can provide direct insight into available programs and their pedagogical and social value. Due to the sheer

number of programs in the Chicagoland area, it can be overwhelming to navigate what is available for different groups, and additionally for teachers to vet each program for curricular alignment. Teachers and community members need a straightforward resource to outline these details, and an important aspect of this project will be to design such a resource with the collaboration of museum education coordinators.

Museums provide endless benefits for educational pedagogy and community engagement, but communication and involvement between institutions needs to be improved if we are to see those benefits come to fruition. The purpose of this project is therefore to explore program availability and effectiveness in order to create a stronger partnership between museums, schools, and communities.

### **Statement of Research Question**

Broadly, this research sought to investigate the positive value of museums with the goal of increasing and improving collaboration between museums, schools, and communities. The questions this study answered include the type of programs are offered in museums and the pedagogical methods they employ in contrast to formal school settings. As this project aimed to show that museums are so much more than an annual escape from school for a field trip—for which they are primarily used—it was important to ask how these spaces partner with surrounding communities to increase engagement and civic participation. In order to answer such questions, several supporting questions were also be presented.

To address the question of pedagogy, museum education coordinators were asked what programs their institution provides for students and teachers, the observable educational and social benefits of these programs, and how said programs go beyond

traditional classroom learning. Teachers in K-12 schools were asked what, if any, role museum education plays in their classroom and (if they do actively participate in museum programs) what goals they seek to achieve through their visits.

To address the question of community engagement and outreach, museum education coordinators were asked what programs they offer that allow for the participation of the greater community, and what benefits these have on the wellbeing of the land and its members. To what degree schools and community members are taking advantage of these programs was also assessed, as coordinators were asked for their insight into how participation can be increased. Teachers in K-12 schools were asked for their feedback on what they would like to see from museums that may increase engagement and create stronger school/museum partnerships.

### **Rationale and Significance**

The future of a healthy society depends on the success of its education system. In the United States, however, our school system is failing our students and teachers by implementing countless policy changes against the recommendation of education experts. These changes have resulted in budget cuts, curriculum shifts that cut arts and humanities in favor of science and technology, and a focus on standardized test prep that only reinforces passive, disengaged “learning”. All of these changes result in a dramatic reduction in schools’ use of museums—and the consequences are striking (American Alliance of Museums, 2017).

The results of the U.S.’s 2015 participation the Programme for International Student Assessment, a cross-national test measuring reading ability, math and science literacy, and other key skills, were abysmal. Out of seventy-one countries whose scores

were analyzed, the U.S. ranked 24<sup>th</sup> in reading and science and 38<sup>th</sup> in math (DeSilver, 2017). Many students at the end of high school do not possess “higher order” intellectual skills; “nearly forty percent cannot draw inferences from written material, only one fifth can write a persuasive essay, and only one third can solve a mathematics problem requiring several steps,” explains Gardner (Gardner, 1983, p. 9). But with the passage of the No Child Left Behind Act in 2001, which aggressively places math and science at the forefront, while defunding arts and humanities in an attempt to increase standardized test scores, why are we still seeing such a devastating decline in student success? This restructuring of the American education system left little space for active, informal learning, and real-world skills training, which included museum visits (American Alliance of Museums, 2017).

Evidence-based data condemning passive learning techniques is far from cutting-edge, yet we continuously fail to implement any sort of meaningful reform in this area. Passive instruction and over-testing cripple the autonomy of learners, who are then disengaged with the system early-on. School disengagement has serious academic, social, and emotional consequences, such as lower levels of achievement across multiple curricula, higher rates of school dropout, increased risk of mental health problems, substance abuse, and violence, etc. (Hancock & Zubrick, 2015, p. 23). As museums have generally evolved with 21<sup>st</sup> century education theories, they have the unique ability to combat this disengagement; school/museum partnerships that incorporate more space for authentic, hands-on, inquiry-driven learning that promotes interaction with artifacts and collaboration with peers may be a key proponent in addressing major issues such as dissatisfaction with the school system and high student dropout rates.

Rigorous studies of museum visits around the country found that participating students “demonstrated greater knowledge of, and interest in, [the subject matter], and also scored higher than peers in measures of critical thinking, empathy, tolerance, and comfort with multiple viewpoints” (American Alliance of Museums, 2017). As our nation experiences a rise in divisiveness and cultural prejudice, it is becoming increasingly important to diversify the curriculum we present to students. The simplest way to promote historical and cultural empathy is simply through increased exposure; the skills that students gain in contextualization and objectivity will be applicable to creating a more democratic, civically engaged, and equitable society (Yilmaz, 2007, pp. 331-337). It is therefore necessary for schools and museums to work together more closely and create collaborative partnerships that foster student and community success.

Museum educators work tirelessly to design well-rounded programs that align with evidence-based research on teaching and learning, embracing collectivist and sociocultural learning theories to the fullest, while also fulfilling curriculum standards. Nationally, museums spend over \$2 billion on educational activities (over three-quarters of which is devoted directly to P-12 students), which may include guided tours, travelling exhibits and staff visits to schools, professional development for teachers, etc. (American Alliance of Museums, 2017). There is not a shortage of funding contributing to valuable educational and outreach programs by museums, yet the participation in these by school and community groups is severely lacking—the academic, social, and emotional consequences of which are concerning.

## **Definition of Terms**

**Active learning:** A teaching strategy that encourages critical thinking and exploration through activity-based, inquiry-driven learning. Such methods can occur in groups or individually, and their purpose is to engage students with new material or perspectives in a hands-on way. In active learning, the instructor often takes a supporting role to relay instructions, scaffold deeper thinking, or guide discussion, while the student is the core investigator. Active learning opposes traditional passive instructional methods such as lecturing and note-taking, with activities that require students to self-assess throughout (Michael, 2006, p. 160).

**Authentic learning:** According to Herrington & Herrington (2007), there are several criteria that define authentic learning; activities must present real-world problems, teaching must be modeled by experts in the field, multiple perspectives are presented, there is ample opportunity for collaboration among learners and between teachers and learners, and effective self-reflection and assessment of individual learning and articulation of new learning through presentation (pp. 70-73).

**Community engagement:** When members of a community come together to participate in activities and programs that promote the wellbeing of the community and its members in a positive, meaningful, inclusive way (Aslin & Brown, 2004, p. 13).

**Constructivism:** A theory of knowledge, as defined by Jean Piaget, positing that learning is an active process and knowledge is “constructed”, or shaped, by the learner as an individual (Hooper-Greenhill, 1994, p. 67). Constructivism rejects knowledge acquisition as a passive process, but is instead built via exploration with the



**Educational pedagogy:** In an educational framework, pedagogy refers to the theory and methods of teaching and learning as it is influenced by social, developmental, and political contexts (Li, 2012).

**Historical empathy:** As defined by Yilmaz (2007), historical empathy is a skill of historical interpretation in which the observer is able “to see and judge the past in its own terms by trying to understand the mentality, frames of reference, beliefs, values, intentions, and actions of historical agents using a variety of historical evidence. Empathy is the skill to re-enact the thought of a historical agent in one's mind or the ability to view the world as it was seen by the people in the past without imposing today's values on the past,” (p. 331).

**Informal learning:** Any learning that takes place outside of formal educational settings, such as schools. Informal learning typically implies a more free-range, social, and active approach to learning. According to Callanan et al. (2011), informal learning is “non-didactive, highly socially collaborative, embedded in meaningful activity, initiated by learner's interest or choice, and removed from external assessment” (p. 646).

**Inquiry-driven learning:** A learning strategy primarily used in science and social studies curricula that engages students as primary investigators in the exploration of quantitative and qualitative data analysis. Inquiry-driven learning often requires students to investigate cause and effect and to create and test hypotheses. Inquiry-driven practices aim to help students gain skills in critical thinking, problem solving, perspective taking, data analysis, etc. (Pedaste et al., 2015, p. 48).

**Multiculturalism:** Referring to the acknowledgement of diverse histories, perspectives, and experiences, with special attention to minority groups and/or historically oppressed groups (LaBelle & Ward, 1994, pp. 1-4). The inclusion of multiple cultures and experiences within a society is for the purpose of creating a more diverse, equitable, and tolerant society.

**Museum:** According to the International Council of Museums, “a museum is a non-profit making, permanent institution in the service of society and of its development, and open to the public, which acquires, conserves, researches, communicates and exhibits, for purposes of study, education and enjoyment, material evidence of people and their environment,” (International Council of Museums, 2022)

**Museum education:** A field of study that focuses on expanding informal educational opportunities and community engagement programs to address educational and social issues via museums (Hein, 2006).

**Object-Based Learning:** A student-centered, active learning approach that uses artworks, artifacts, archival materials, or digital representations of unique objects to inspire close observation and deep critical thinking. Object-based learning stimulates wonder, awe, curiosity, and engagement to promote interest in acquiring and applying knowledge to other contexts both in and out of the classroom (University of Miami, n.d.).

## **Order of Presentation**

As I conclude Chapter 1 as an introduction to the research problem and its purpose, Chapter 2 serves as a comprehensive review of the history and literature

surrounding museum education and explanations of the pedagogical frameworks supported by these institutions, as well as the positive impact of community outreach as supported by existing literature. Chapter 3 focuses on the conceptual framework and research methodology used to address the research question and collect and analyze data. Chapter 4 presents research findings and analyzes data. Chapter 5 consists of general conclusions, including implications of the research on educational theory, practice, and policy. This section will also include a comprehensive handbook of museum programs in and around Chicago to serve as a resource for teachers and community members to increase engagement.

## **CHAPTER II: Review of Literature and Rationale for Current Study**

### **Introduction to Previous Scholarship**

#### **History and Purpose of Museums**

The process of preserving and showcasing artifacts is by no means a modern phenomenon; engaging in the arts, science, literature, and culture as a shared activity is distinctly representative of the human experience and can be traced back to prehistoric times. Humans are intrinsically curious and sentimental beings that seek out beauty and connection, and museums, with their unique treasures and cultural richness, are exemplary of such experiential immersion. Since then, museums have evolved from arbitrarily arranged personal collections of the wealthy as elaborate displays of opulence and national pride, to institutions of academic research, contextualization, civic improvement, and inclusion—irrespective of class (Chaliakopoulos, 2020).

#### **Ancient Greece: From Mythology to Empiricism**

The concept of museums as established centers of scholarship came about in ancient Greece, in devotion to the nine muses—deities of various areas of study including music, poetry, politics, astronomy, among others (Günay, 2012, p. 1250). The pinakothekē, or public galleries that sat on the Acropolis at Athens, displayed art and religious relics, as the two were often intertwined in ancient Greece. These *mouseions*, or “seats of the muses”, were usually free, or requested only a small fee, making them largely accessible to the public. These museum-like spaces are separated from contemporary museums in that they focused more on extravagant displays of beauty that reinforced “Greekness”, rather than systematic classification and academic

discovery. Aristotle reconceptualized the “museum” with his establishment of the Lyceum, an academic institution of philosophy where artifacts were collected, studied, and classified; the beginning of empirical methodology, and therefore the concept of the modern museum, is often credited to Aristotle by many historians (Chaliakopoulos, 2020). For a substantial period of time after the Greeks, however, museums as sites of systematic classification, academic discovery, and empiricism regressed.

### **Ancient Rome: Scientific Investigation Regresses to Exclusive Displays of Wealth**

The Romans later followed suit with their own pinacotheca, mostly consisting of looted Grecian artifacts, which became decontextualized from their origin. These galleries were often housed in private residences which were off limits to the general public. Due to their elitist nature, the pinacotheca and Roman nobility who controlled them, were often the target of public criticism (Chaliakopoulos, 2020). Thus was the regression of museum-like spaces to propagandize national strength and avariciousness that would continue for the next several centuries.

### **The Middle Ages: Cabinets of Curiosities**

The collections in these spaces—often called Cabinets of Curiosities during the Middle Ages—expanded far beyond the traditional artistic and religious relics common in ancient civilizations, and now included both natural (flora and fauna, living and taxidermized animals) and artificial curiosities (coins, weapons, miniature replicas) (Günay, 2012, p. 1252). As with ancient Greece, the Middle Ages saw a revival of the intertwining of artifacts and religious divinity, and many collections were stored either in churches or palaces. These Cabinets of Curiosities, however, focused little on civic

improvement or engagement, but were merely exhibitions of pillaged materials seeking to aggrandize empires and Christendom; collections did not exist for the citizens, but stood as ostentatious reminders of an empire's imperialistic successes. This era also witnessed a regression from empiricism as an accepted school of thought; the practice of systematic classification and rational thought was lost on Medieval nobility as they rejected science in favor of magic and mysticism (Günay, 2012, p. 1250).

### **The Renaissance: The Return to Rational Thought**

The increase in global travel and revitalization of arts, literature, and philosophy during the Renaissance brought about a diffusion of cultural practices and artifacts, as well as a transition back to rational thought, which had significant implications for museums' methods of operation. Günay (2012) explains that, "museums started to develop as service facilities that contribute to the progress of society instead of settings that only collect and store objects," (p. 1250).

### **The Enlightenment: The Dismantling of Plutocratic Museums and the "Golden Era"**

The Enlightenment saw the fastest spread of museums to that point—"European capitals were now competing in a race to establish their museums. By the first decades of the 19th century, the museum was a well-established institution," explains Chaliakopoulos (2020). During this era, the now-common concept of a university-connected museum was born with the Ashmolean Museum, run by Oxford University. This was the first of the truly "modern" museums in the sense that they were academic institutions providing docent-led tours to the public. And although they still somewhat represented the wealth and prestige of an empire, they were dedicated to empirical

research, systematic categorization, and academic scholarship more deeply than any other era in history, to that point (Chaliakopoulos, 2020).

It was with the establishment of the Louvre during the French Revolution that cultural hoarding by elitist monarchs was forcefully dismantled, as King Louis XVI's amassed collection was expropriated for public use. The revolutionaries made access to the Louvre free as part of their sentiment of museums as spaces by and for the people, and their commitment to cultural and civic improvement. This was the beginning of museums as "mainstream" attractions, sparking what would be known as the "golden age of museums" for the next several decades (Günay, 2012, p. 1254).

### **The 20<sup>th</sup> Century: Progressive Museums as Spaces of Resistance**

Throughout the 20<sup>th</sup> century, museums saw new types of visitors, and rapidly transitioned to sites of civic resistance that sought to democratize society and education. During the Progressive Era, museums were frequented by the poor and working class, although exhibits were not yet designed for the common man; "I think it is nonsense to acquiesce in opening our doors on Sunday and at the same time to do nothing to help the Sunday visitor," said Benjamin Ives Gilman of the Boston Museum of Art (Hein, 2006, p. 343). These "Sunday visitors", as they were called because they spent their only day off from their six-day per week, twelve-hour per day factory jobs at museums, are representative of how intrinsic museums had become to the social fabric; in this way, museums were sites of resistance to an oppressive society, as the working class used them to reclaim their freedom. The response to these new visitors in the early 20<sup>th</sup> century sparked updated educational tools geared toward the "average" person (such as

large print labels in plain language, docents to give guided tours, etc.), rather than the upper-class and academics, as they had been previously.

Museums in the Progressive Era began to draw attention to current social and political causes by offering courses that helped educate the working class on civic matters, serving as common sites of soapboxes for women's suffrage, labor movements, and other pressing political issues, and expanding their hiring practices to include the marginalized (Hein, 2013, p. 64).

These progressive advancements continued to support the intense social and political resistance that surged in the 1960's and 70's. In the face of these decades' explosive race riots, controversial military involvement, changes to healthcare access, extensive education reform, etc., most museums were unwavering in their commitment to liberal education initiatives that sought to embrace progress rather than suppress it. "Progressive museums...follow [John] Dewey's lead and combine experiential learning with a commitment to the socio-political goal of promoting democratic practices," explains Hein (2013, p. 63).

### **The 21<sup>st</sup> Century: Modern Museums and the Digital Age**

Museums have evolved tremendously in their purpose and audiences since ancient Greece; "museums sporting object centered and self enclosed approaches until the 19<sup>th</sup> century have headed towards human centered and outward looking approaches since the [1960's]," explains Günay (2012, p. 1257). This transformation, especially in recent decades, results from museums' embrace of the latest educational and social theories, including those of John Dewey, Jean Piaget, and Lev Vygotsky. As new fields of research were discovered in the 20<sup>th</sup> and 21<sup>st</sup> centuries, more museums dedicated to



niche subcategories were built, and many of these have expanded out of major metropolitan areas for rural access as well. Most modern museums are designed explicitly for educational purposes, as they offer tailored educational and cultural programs that are linked to their particular state and local curricula and meet the needs of their unique community (Crowley et al., 2014, pp 461, 466). Twenty-first century museums have paved the way toward bridging the digital divide, offering an array of cutting-edge, technologically immersive programs. This increased in response to the Covid-19 Pandemic, as museum coordinators rushed to create virtual tours and exhibits in order to maintain accessibility and mitigate educational and cultural disengagement. As technology continues to advance, it is safe to assume that museums, too, will only become more technologically invested (Chaliakopoulos, 2020).

In response to increasing pressure to demonstrate that they serve a broader public, and not only an educated and cultured elite, modern museums have put in the work to acknowledge and amend their imperialist and elitist histories, and many are forthcoming with the public on their tainted pasts (Crowley et al. 2014, p. 461; Chaliakopoulos, 2020). Museums have become more than houses of artifacts—they are “spaces of care” that represent social and political resistance. They are therefore the most equitable and inclusive they have ever been, as they are continuously improving public access and uplifting those from underserved communities, with disabilities, and other systemically oppressed minorities. Surpassing even the “golden era”, there has never been a better, more accessible, or more critical, time for schools and communities to immerse themselves fully with museum programs.

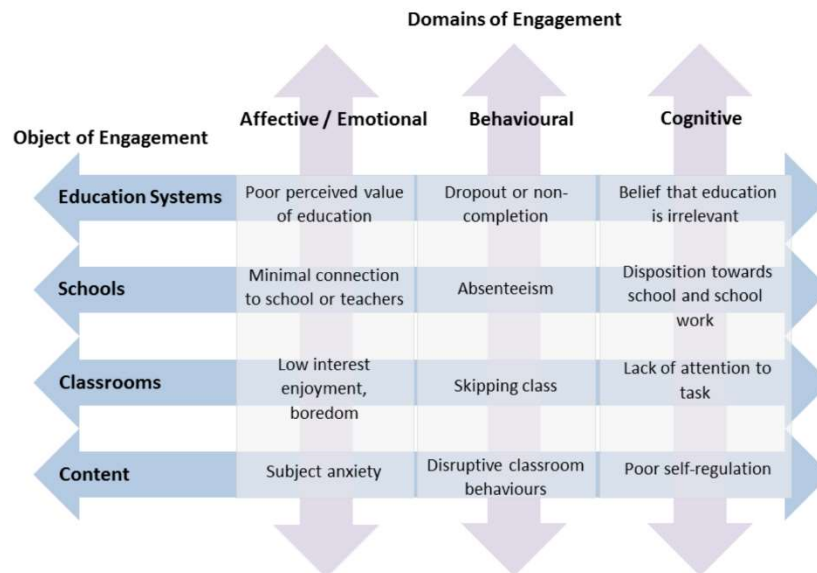
## **School Dissatisfaction and Disengagement**

The burden of implementing the developing pedagogies of the 20<sup>th</sup> and 21<sup>st</sup> centuries has largely fallen on informal educational organizations and cultural institutions—like museums—as the restructuring of the school system has not allowed for them to be adequately practiced in classrooms (American Alliance of Museums, 2017). Since the 1960’s and the passage of the Elementary and Secondary Education Act under then-president Lyndon B. Johnson, there have been billions of dollars spent and dozens of policies drawn up regarding public school reform and improvement. Even with the passage of this and other bills, including No Child Left Behind (NCLB) under George W. Bush, public schools have failed to improve on a grand scale. NCLB fundamentally changed the way American schools operated; in an attempt to rapidly even the playing field and get all students up to developmentally appropriate levels, it created an obsession with testing that hyper-focused on math and science. This “teach to the test” mentality essentially cut creativity out of the curriculum, as it led to the defunding of the arts and humanities and other “nonessential” programs, and the reinforcing of passive learning (Ravitch, 2010, p. 2). While NCLB did narrow some gaps, it only minimally raised national test scores (although the validity of these scores has been debated), and socioeconomically disadvantaged students, as well as students of color, are still disproportionately low achieving in comparison to wealthier, whiter districts. (Ravitch, 2010, p. 2).

The NCLB framework leaves teachers anxious about job security and discouraged at the lack of agency they have over their own curriculum, and leaves students bored, disengaged, and exhausted. These frustrations are a recipe for disaster and have left a

majority of stakeholders feeling dissatisfied with the American school system. Student disengagement results in several negative outcomes, which, according to Hancock and Zubrick (2015), can be categorized into three areas: affective/emotional, behavioral, and cognitive. Figure 1 outlines specific examples of such outcomes in each of the three areas (p. 17).

**Figure 1:** Conceptual diagram of engagement, with examples of forms of disengagement



### Museum Philosophies

In an analysis of museum missions by Zeller (1989), three major philosophies of museums were defined: the educational museum, the aesthetic museum, and the social museum (as cited in Hein, 2006, pp. 342-343). The educational museum, championed by George Brown Goode, former administrator of the Smithsonian Institution and founder of the National Geographic Society, is an “institution of ideas for public education” that focuses on systematic classification and presentation of specimens for

visitors. Benjamin Ives Gilman, an art historian and former secretary of the Boston Museum of Fine Arts, argued for the museum as an aesthetic institution, describing them as “temple[s] for the contemplation of beauty”. Finally, the social museum was the legacy of John Cotton Dana, an American librarian and museum director. His work was dedicated to expanding and improving accessibility of museum programs for the broader community, as well as to capture the social and political context of the era (Hein, 2006, p. 343). While each operates as its own unique philosophy, these all build upon one another, making museums some of the most complex and well-rounded institutions for the public. The subsequent sections will attempt to explain the pedagogical methods and community engagement tactics implemented by museums in the context of the educational and social philosophies.

### **Educational Pedagogy**

While museums certainly serve aesthetic and social purposes, the educational philosophy is the most comprehensive concerning modern museums, as even the aesthetic and social benefits are necessarily educative. Most individuals’ first learning experiences are in informal spaces, such as museums, making their contribution to visitors’ sense of identity and their educational trajectory indispensable (Crowley & Jacobs, 2011; Crowley et al., 2014, p. 470). Learning can be seen in every intricate interaction with museums, as visitors navigate through the space, decide how to connect with each exhibit, and make sense of what they are experiencing (Crowley et al., 2014, p. 461). Modern museums incorporate the latest pedagogical frameworks as they champion authentic, active, and inquiry-based models; these models have been shown through copious amount of research to improve student learning and are simply

unmatched by the traditional school setting.

### **Authentic Learning**

Primarily, museums are sites of authentic learning, as they offer real-world, object-based, and actively engaging opportunities guided by field professionals, docents, classroom teachers, peers, and the students themselves. As such, the criteria for an authentic learning experience, as defined by Herrington and Herrington (2007), neatly coincides with museum program offerings, vindicating their use as legitimate educational tools. Authentic learning experiences effectively improve student performance across a host of measures, including contextualization and analysis of source material, peer collaboration and deliberation, tolerance and empathy, and personal motivation (pp. 69-70). The primary goal of authentic learning is to contextualize information in terms of real-world experiences and applicability, while traditional methods of lecturing, note-taking, and textbook work often lack richness and present information in an abstract and decontextualized way. Creating nuance in how information is presented creates a sense of motivation and personal agency for students when they understand that their learning has relevance to real-world issues. This motivation has a spillover effect and sparks passion for social improvement in their own lives and communities (Herrington & Herrington, 2007, p. 70).

### **Active Learning**

As many experts blame passive learning via note taking and repetition for the lack of hard skills acquired by students as they leave the school system, extensive research has been done on the effectiveness of active learning techniques. This pedagogical method promotes activity-based learning and typically implies a student-

centered approach, meaning it is the students who influence the content, activities, and pace of learning (Michael, 2006, pp. 159-160). This expansive model aims to keep students both mentally and physically active during the learning process, although it does not necessarily look like any one thing; examples may include posing thought-provoking questions to guide students throughout an exhibit, group work in which students navigate and exchange ideas about a collection together, performing historical or scientific inquiry using primary sources and state-of-the-art technology, or role-playing the lived experience of others. An investigation of active learning in museums from an educational psychology perspective found that museums inherently foster intrinsic motivation to learn, and the desire for sustained engagement with objects and content (Munley, 2012, p. 6). Museum programs that engaged students in active learning were shown to be the most direct in achieving significant improvement in high-level subject-area skills, and a multitude of research has revealed active learning in museums improves memory of both subject matter and social context of the visit (Rule, 2006, p. 4; Kallery, 2011; Munley, 2012; Crowley et al., 2014, p. 466). Active learning is a critical pedagogical method, as students who learn through this approach have higher cognitive functioning, greater improvement in learning over time, and more positive attitudes toward learning overall (Allard et al., 1994, p. 200).

### **Inquiry-Driven Learning**

Museum educators are specifically trained in inquiry-driven methods that seek to improve student's problem solving and critical literacy skills as they form and test hypotheses, make observations and draw conclusions, investigate source material and its legitimacy, and engage in frequent self-assessment and reflection. Review of this

process in art museums showed steady improvement in students' observation, association, and interpretation skills, and found inquiry to be the best pedagogical method for developing critical thinking skills (Hubard, 2011, p. 16). Meta-analyses comparing inquiry to other forms of instruction, such as direct instruction or unassisted discovery, found that inquiry-driven teaching resulted in better learning and the ability to articulate and present said learning (Pedaste, et al., 2015, p. 48). According to Friesen and Scott (2013), inquiry-driven curriculum creates students who are *engaged thinkers* that approach problems critically and innovatively with others of multiple perspectives to find solutions and adapt to a changing world, *ethical citizens* who contribute fully to the world through compassion, communication and fairness, and possess *entrepreneurial spirits* that strive for excellence through discipline and perseverance (p. 3).

### **Object-Based Learning**

The opportunity for object-based learning is what distinguishes museums from other educational settings most, as they provide hands-on opportunities for students to actually perform scientific experiments in laboratory settings, observe genuine historical and artistic artifacts, and use state-of-the-art tools and equipment. These programs do not consist of merely passively absorbing knowledge, but they require students to literally transform into biologists, environmental scientists, astronauts, archaeologists, historians, artists, and policymakers. To effectively impart real-world knowledge on students, experts advocate for learning to take place outside of the school setting in a meaningful environment that reflects the way knowledge will ultimately be used (Herrington & Oliver, 2000, p. 4). Museums are excellent settings for object-based

learning with the resources they are able to provide that many schools simply cannot (due to geography, funding, etc.); a student living in suburban Illinois may feel disconnected from a marine biology unit until they have a learning experience at the Shedd Aquarium, an inner-city student may not recognize a passion for botany until they are introduced to the exotic plant life at the Garfield Park Conservatory. Work on object-based learning in museums by Graham (2008) showed that engaging with objects sparked deeper curiosity about the object and broader topic, as visitors felt in control of their own learning experience and could follow their own interests (p. 3). Object-based learning was also shown to improve upon a range of skills, such as investigation and reasoning as visitors were guided by their own real choice, language and communication as visitors asked more questions and engaged in more discussion about subjects they had learned about through objects, and recall, as visitors remembered more detailed information about topics presented with objects (Graham, 2008, p. 4). In an investigation done by Kallery (2011), four-year-old museum-goers were introduced to concepts of sphericity of the Earth and the phenomenon of day and night using an object-based approach, and in a follow-up two weeks later, children easily recalled this information; Kallery's (2011) research concluded that object-based learning in museums helps students develop fundamental concepts typically considered difficult for their age, which increases their motivation to learn and creates lifelong interest in the particular topic and learning in general (Munley, 2012, p. 7).

### **Bridging the Digital Divide**

Modern museums play a critical role in bridging the digital divide, as visitors have the opportunity to test and interact with state-of-the-art technology and equipment



that isn't normally accessible to them at school or home. To remain relevant in the Information Age, museums use technology in several ways. For those who wish to explore individually, guided audio and video commentary that provides deeper context than wall labels are often readily available from a smartphone or tablet device. Science museums often have sophisticated machinery, such as microscopes and data logging systems. Interactive exhibits that allow visitors to manipulate and play with objects are becoming popular, and often provide multimedia engagement. A study investigating museum experiences based on technological integration found that students who used technology during the program rated their visit as being more engaging and meaningful, having learned more, and felt more emotionally connected to exhibits than those who did not use technology (Othman, 2011, p. 95). Bridging the digital divide is necessary for creating a more equitable education system, as a majority of those left behind are students of color and low socioeconomic status. Access to technology in the learning environment prepares students to develop skills in research, creative problem-solving, and digital literacy that are necessary to be savvy in an increasingly technology-invested society (Othman, 2011, p. 93).

### **Collaborative Learning**

Museums promote close collaboration between students and their peers and teachers, drawing directly from sociocultural theories that posit learning as a social activity requiring civil discourse and interaction (Rule, 2006, p. 5). Novice learners are able to look toward more experienced learners to model activity-based methods, which contradicts the traditional didactic role of classroom teachers and instead supports a more constructivist, "learn by doing" approach. While active, authentic learning

experiences are necessarily more student-centered, educators are still supporting learning via appropriate scaffolding methods when necessary, which may only occur at the metacognitive level, explain Herrington and Herrington (2007, p. 73). Here, too, museums have a pedagogical advantage as their programs are scaffolded by experts and highly-trained docents in niche fields that classroom teachers may not be specifically trained. According to Michael (2006), a multitude of research has been done showing that individuals learn more when they learn with others than when they learn alone; when participants share ideas with one another, they are able to ask and answer questions, clarifying and expanding their knowledge on a particular issue (p. 161). The value of communicating with others during the learning process is directly observable in museums, as visitors on average tend to spend triple the amount of time at exhibits that invite conversation and interaction than those that do not (Rand, 2010). Programs that use open-ended discussion and collaboration are reported by students to be their favorite and most memorable museum experiences (Munley, 2012, p. 10).

### **Critical Multiculturalism**

Without peer collaboration, there is no opportunity to share multiple perspectives; exposure to already-accepted perspectives does not fulfill progressive, democratic learning models and instead promotes a limited worldview. Engaging with others of diverse backgrounds teaches students critical skills such as cooperation, creativity, respectful deliberation, empathy, and tolerance, and helps them to understand and appreciate others' lived experience in historical and social contexts. Historical empathy is a skill, rather than an emotion, that is developed through repeated exposure and effort to understand diverse cultural literature, arts, and artifacts; it helps

the learner to contextualize circumstances, actions, and perspectives of those who are different from them (Yilmaz, 2007, p. 332). The United Nations Convention on the Rights of Children promulgates the need for children to have free and full access to cultural life from birth, and museums are ideal for this task of making children cultural citizens (Mai & Gibson, 2011; Munley, 2012, p. 5). Museums are experts at translating complex social issues such as democracy, class struggle, emotional regulation, and historical empathy into narratives that are appropriate for children and intergenerational audiences (Bedford, 2010). Yilmaz (2007) explains direct methods to practicing empathy, which include “access [to] authentic historical sources, engaging in critical examination of those sources, making evidential reconstruction...of beliefs, values, goals, and feelings that historical agents had, and live the thoughts of past individuals through the heuristic of contextualization,” (pp. 333-335). Based on these criteria, museums are often the only accessible sites for many people to authentically practice historical empathy when classrooms fall short; “historic sites are increasingly called upon to help remedy the persistent reproach that many teachers lack both content knowledge in history and enthusiasm for the subject,” according to Baron (2012, pp. 833-834). Multicultural models acknowledge diverse histories, perspectives, and experiences, with special attention to minority groups and/or historically oppressed groups for the purpose of creating a more diverse, equitable, and tolerant society (LaBelle & Ward, 1994, pp. 1-4). As our nation experiences a rise in divisiveness and cultural prejudice, it is becoming increasingly important to diversify the curriculum we present to students. The simplest way to promote historical and cultural empathy is simply through increased exposure; the skills that students gain from museums in contextualization and objectivity will be applicable to creating a more democratic society

(Yilmaz, 2007, pp.331-337). It is therefore necessary for schools and museums to work together more closely and create collaborative partnerships that foster student and community success.

### **The Role of Museums**

Although authentic, active learning approaches and their effectiveness are not new fields of research, our school system has failed to adapt in accordance with the mounting evidence of their necessity

(Michael, 2006, p. 159). Museums, on the other hand, have generally updated their practices to implement more constructivist and sociocultural pedagogies—such can be seen in a range of programs geared toward specific audiences, exhibits that encourage sensory interaction, inclusion of social and cultural context, and group learning sessions, among others. “Museums function as learning environments that are self-reinforcing and motivating, support deep investigation and learning, encourage the growth of out of school learning identities, provide communities of practice for learning and advancement, and can result in considerable engagement throughout a learner's life,” explains Crowley (2014, p. 471). These distal outcomes cannot be achieved in a single museum visit, rather they must be cultivated through sustained engagement over time and place (Crowley et al., 2014, p. 470). Maintaining school/museum partnerships that incorporate space in the curriculum for progressive pedagogy may therefore be the key to addressing major issues such as dissatisfaction with the school system, high student dropout rates, and sociopolitical divisiveness.

## **Community Engagement**

With the increase of progressive reform movements over the last decade, greater focus has been placed on engagement as an approach to build stronger connections and collaborations between museums and communities with the aim of increasing learning, wellbeing, and public participation (Lackoi et al., 2016, p. 93). Democratic societies are dependent upon action-oriented, civically engaged communities invested in social policy and improvement, and dedicated to diversity and inclusion efforts. Engagement programs help to create a community's sense of identity, to empower its members and give them a voice. The application of these engagement initiatives may look different across communities as they are tailored to their specific needs and resources, but the intention and outcomes are the same.

Museums offer several opportunities for engagement, such as volunteer positions, fundraising, internships, employment, group classes, cultural celebrations, and outreach initiatives. The common goal in these programs is to create change in a meaningful way, whether that be academic and job skills training that provide opportunity for personal advancement, funding that can be put back into the neighborhood, personal enjoyment and fulfillment, inclusion and tolerance of multiculturalism, or creating lasting relationships and support systems. They are emotional spaces of acknowledgement where marginalized people can both grieve and celebrate their histories and lived experiences, while others can critically engage with the stories of Black/Indigenous people of color, members of the LGBTQIA+ community, women, etc. to work toward a culturally sustaining society. Museums have the opportunity to heal communities, and those that benefit the most from this are

underserved communities facing disparities in socioeconomic status, education, healthcare, and safety. Museums are agents of social change, and by acknowledging their influence in the social policy sphere, we can amplify and invest in marginalized voices. This molds the next generation of civic-minded, empathetic, and passionate people to shape the future of their communities.

A majority of museum community engagement projects aim to connect with “hard to reach” audiences for the purpose of identity work, self-reflection, and sensemaking (Munro, 2015). Participants who engaged in community programs through museums said practical and emotional support were the most integral aspects of their experiences; one such project at Glasgow-area museums recruited community members who had experienced homelessness, poverty, or mental health crises with the purpose of “[exploring] participants’ understanding of identity, community, and society by [interacting with museums] through the prism of sociological concepts and theories,” (Wallen & Docherty-Hughes, 2022, p. 95, 98). These participants engaged in activities such as one-on-one interaction with museum staff, access to a resource center and museum archives that are typically unavailable to the public, and exploration of exhibits that represented issues relevant to their particular circumstances. Taking part in these engagement programs encouraged participants to raise critical questions about social inequalities that pertained both to their particular circumstances and the broader community, and they reported feeling a sense of confidence and agency in raising these critical questions; this confidence enabled participants to create future plans for their own personal improvement and the improvement of their community that they had previously not considered or felt were unattainable, reported Wallen and Docherty-

Hughes (2022, pp. 97, 99). Community engagement initiatives through museums are important for reflecting on lived experience, reconciling with the past, and reframing narratives, as participants in the case study from Glasgow-area museums reported a deeper sense of identity and critical self-awareness in the context of both their own and others' lived experience (Munro, 2015; Wallen & Docherty-Hughes, 2022, p. 97).

Museums that work to support their communities become a safe space for its members where they feel cared for, and literature suggests that community engagement within museums is therapeutic, as participation in these efforts shows lower levels of mental distress and higher levels of overall life satisfaction, positive effects on self-esteem and confidence, recovery from illness, and more healthy social relationships (Munro, 2013, p. 20; Wang, 2020).

“Cultural institutions provide the glue that binds communities together. Culture attracts people to a place, just as much as good schools, housing or transport and creates an environment in which other industries, goods and services can grow,” (National Museum Directors' Council, 2022). Museums, as recognized spaces of resistance, care, and acknowledgement, present a unique opportunity for community engagement and cultural programming. Research on museums for community engagement highlight their long-term legacy and sustainability, as such programs not only prepare members for a host of higher education and career opportunities, but they create a sense of identity and pride in the community (Wallen & Docherty-Hughes, 2022, p. 98).

Museums have the power to give communities hope, and that positive change can have a snowball effect that embodies the very essence of progressive pragmatism (Hein, 2006, pp. 171-172).

## **Gap in Previous Literature**

Many of the pedagogical theories discussed in Chapter II are by no means new to the field of education. In fact, most of them are several decades old, as is the data confirming their legitimate benefits to classroom models. Such is also true of data on the positive impact of community engagement; an abundance of research exists on the importance of inclusion and diversity, social justice initiatives, civic literacy, etc. What is lacking, however, is data on these theories and programs in the context of museum education. Nearly every progressive pedagogical practice—active, authentic, inquiry-driven learning—is woven into the very foundation of museum education programs, yet they are rarely discussed in educational literature as critical partners in executing these methods. Similarly, museums are arguably the most accessible and civically-committed institutions that exist, yet their influence is continuously overlooked. The lack of participation in these programs to their full extent may be the result of inadequate literature linking museums to pedagogy and civic improvement.

## **Critical Analysis and Rationale for Current Study**

It is unlikely that a majority of school faculty or stakeholders would deny the relevance of museums to educational pedagogy; in fact, every set of state curriculum frameworks recommends that teachers partner with museums to improve student learning, yet there remains a disconnect between theory and practice—museum programs are simply not being used to their full extent (Baron, 2012, p. 834). It may be argued that there are legitimate constraints in the education system that prevent schools from fully investing in these programs, such as lack of funding, or other limitations brought on by the restructuring of the school system since the inception of NCLB, such



as an overabundance of testing in the already-short 180-day school year or the absence of dedicated humanities programs (the subject of a majority of museums). A majority of the literature on progressive pedagogical methods was not written by K-12 teachers, and therefore the extent to which they impose these methods is simply unrealistic. Teachers may understandably feel overwhelmed by the abundance of literature pressuring them to redesign their entire curriculum when they already lack sufficient time and resources. However, active, authentic, and inquiry-based learning, as well as museum visits, do not need to happen every day in order to still be effective. The goal is not necessarily to revise every lesson plan overnight to be a grand entertainment experience, but a gradual transformation to more frequent authentic practices is possible.

The blame for this underuse does not fall on any one particular group, and therefore the solution must be the combined effort of museums, schools, and broader communities (American Alliance of Museums, 2017). This thesis will serve as a guide for educators and community groups to neatly outline the multifaceted benefits of available museum programs in the hopes that it will persuade readers to view museums as indispensable to the advancement of education and the greater society, and therefore engage with them more frequently. Additionally, this thesis will provide a handbook of available programs in and around the Chicagoland area as a straightforward, comprehensive resource that alleviates the search process for visitors.

## **CHAPTER III: Conceptual Framework and Methodology**

### **Discussion of Conceptual Frameworks and Methodology Used**

The guiding conceptual frameworks of this project rely on the educational and cultural theories of John Dewey, Jean Piaget, and Lev Vygotsky, as essentially all methods of progressive education that fulfill both the educational and social philosophies of museums are dependent on their work. Dewey's experiential learning and Piaget's constructivism are the very foundations of the modern educational museum in their mission to provide active, authentic, and inquiry-based learning opportunities that support individual autonomy and reasoning. Dewey's further theories on pragmatism and Vygotsky's extensive work on sociocultural theory demonstrate the social museum as sites of cultural richness and enlightened social progress. While the work of these theorists may reflect different milieus, together they are integral to progressive, democratic pedagogy and they have laid the very foundation for museum education.

#### **John Dewey**

The pedagogical methods discussed in the literature review are largely based on the work of philosopher John Dewey. Dewey was a fierce critic of passive education and its incompatibility with children's developmental capacity and the evolving social and political state of affairs; he writes of passive education, "that which is taught is thought of as essentially static. It is taught as a finished product, with little regard either to the ways in which it was originally built up or to changes that it will surely incur. It is...the cultural product of societies that assumed the future would be much like the past," (Dewey, 1939, p. 5). However, we are not a static society, so Dewey championed

progressive education initiatives through his work on experiential learning and pragmatism. He writes in his publication, *Experience and Education* (1938), that personal experience creates an intimacy and nuance to learning and progressive education allows us to break free from the traditional system in which learners are manufactured cogs in the machine, and instead use our knowledge pragmatically. Dewey's theory of pragmatism asserts that conceptual knowledge can be used for social and moral progress, combining the philosophies of the educational and social museum; the museum, used as a pragmatic platform, is an important weapon in the struggle to preserve democracy (Hein, 2012).

### **Jean Piaget**

Piaget, like Dewey, was critical of a system that did not tailor its education to the developmental needs of children, and instead used methods of passive instruction that did not allow for exploration and experimentation. Piaget's background in epistemology and child psychology influenced his work on constructivism. Constructivism suggests that learning is actively built or "constructed" through individual experimentation with the physical world. Piaget explained constructivism as an individual experience of the learner, and while this does not negate social influences completely, it does challenge the traditional assumption that idly accepting information from teachers will prepare students to articulate learning and put theory to practice. This method fosters a sense of personal agency, autonomy, and self-awareness in the learning process (Koohang, et al., 2009, p. 3)

## **Lev Vygotsky**

Vygotsky's sociocultural theory explains learning as a social activity in which learners share previous knowledge, beliefs, language, and culture with one another (Vygotsky, 1978). With a classical background in linguistics and literary analysis, Vygotsky focused heavily on the role of language as a shared human experience. As a model of dialogical knowledge construction, the way students speak, act, write, think together, and construct shared artefacts has complex social and cultural implications, and therefore has power over the preservation of democracy (Ruhalahti, 2019, p. 22). Like Dewey, Vygotsky viewed shared cultural experiences as a means to elevate human thought, and placed the responsibility of preparing students for civic engagement in a diversifying nation on educational institutions (Mayer, 2008, p. 7).

Vygotsky's theory has specific implications for teacher/student interaction with his defined zones of development. He uses the zone of proximal development (ZPD) to explain the distance between what the learner currently knows and can do on their own (actual development level) and higher order cognition that can be reached through continued guidance and collaboration (potential development level). The teacher must employ proper student-centered scaffolding techniques to help the learner progress through ZPD (Ruhalahti, 2019, p. 23). This theory, too, employs authentic principles as learners must actively engage with the sociocultural contexts of their environment in order to expand their knowledge base and world view, and informal spaces—such as museums—are designed specifically to support sociocultural theory (Crowley et al., 2014, p 462).

## **Methodology**

This project utilized both basic and applied research methods in order to investigate the underuse of museums and subsequently present data on their legitimate civic value to spark an increase in partnerships between museums, schools, and communities. Extensive literature reviews elaborate on evidence-based, progressive pedagogical frameworks that are employed by museums. Descriptive methods used in this study consisted of interviews and self-reported surveys. Available programs and exploration of their educational and social value for students, as well as how museums are engaging in outreach programs for schools and communities were investigated through interviews with museum education coordinators from various museums around Chicago. Teachers' attitudes on and use of museums were reported through anonymous surveys to investigate areas for improvement at the museum, school, and state level. Data analysis consisted of both qualitative measures to articulate the responses of participants as well as quantitative measures to identify any patterns in museum involvement or lack thereof. Further analysis and comparison between interview and survey responses helped to generate realistic strategies for improving communicative partnerships.

### **Methods of Data Collection**

This study consisted of two participant groups: museum education coordinators and K-12 teachers. Structured interviews were conducted with museum education coordinators from Chicago museums to discuss program availability, outcomes, and participation. Participants were recruited from staff contact pages on museum websites and sent an initial recruitment email detailing the topic of study and requesting to

schedule a meeting time; their written email response confirming to meet for an interview served as their voluntary agreement. The employees interviewed had comprehensive knowledge on all museum programs offered, as well as statistical data on outcomes and participant numbers. The interviews consisted of six open-ended questions that allowed for elaboration by the education coordinator, and subsequent probing questions were sometimes asked, depending on the thoroughness of the provided answers. These questions were as follows:

1. What programs does the museum offer for K-12 students and teachers?
2. How do these programs go beyond traditional classroom learning?
3. What are the educational benefits of these programs?
4. What are the social benefits of these programs?
5. Are schools taking full advantage of these programs? If not, why do you think that is?
6. Does the museum offer any community outreach programs? If so, what are these programs and how do they provide to the community and its members?

The interviews took approximately thirty minutes to conduct. Interviews were conducted one-on-one, in-person and audio was recorded on a personal recording device while the researcher took hand-written notes. After the interview, all audio recordings were transcribed to text, included in Chapter IV. The audio was only accessible to the researcher and the researcher's supervisor, and was permanently deleted upon the completion of the thesis. Accommodations to conduct the interview via email or phone, at the discretion of the participant were available, although none requested this arrangement. Because interviews were conducted in-person and audio-recorded, the information these participants provided was identifiable. The information provided was kept strictly confidential, however no private or sensitive information was

collected in this interview. The participation of the education coordinators was at their own discretion.

The other set of participants consisted of K-12 teachers in and around the Chicagoland area who have been teaching for at least one full school year prior to completing the research survey. Teachers were recruited indirectly via an email to school administrators requesting participation in the project. Recruitment emails clarified that the survey was optional and could be filled out at their own discretion or disregarded completely. Surveys were administered anonymously via Google Form and consisted of a blend of multiple choice and short response questions:

1. Please select the option that best describes your school:
  - Urban Public School
  - Urban Private School
  - Suburban Public School
  - Suburban Private School
1. Please select your grade level taught (check all that apply):
  - Elementary School
  - Middle Grades
  - High School
  - Other:
2. Please select your subject area taught (check all that apply):
  - Art
  - English
  - Foreign Languages
  - Math
  - Music
  - Physical Education
  - Science
  - Social Studies
  - Other:
3. What role, if any, do museums play in your teaching?
4. Have you taken your students to a museum in the past school year, or in school years pre-Covid-19?
  - Yes
  - No
5. If you answered "yes", please describe which museum(s)/activities, and what you think your students got out of the experience:
6. If you answered "no", please specify the reason(s) (check all that apply):

- Lack of advertising/didn't know what programs were available
  - Lack of quality programs/programs that don't fit the curriculum
  - Time constraints of the school year
  - Cost prohibitive
  - Other:
7. As an educator, what would you like to see from museums that would make it more likely for teachers to visit and/or take part in programs with their students?

The survey took teachers approximately fifteen minutes to complete. Data collected was sent directly to the researcher via private Google account, and was only accessible to the researcher and the researcher's supervisor. Survey responses were permanently deleted upon the completion of the thesis. The survey was completely anonymous, therefore responses were unable to be traced back to the individual participant. The information provided was kept strictly confidential, however no private or identifiable information was collected. The participation of teachers was at their own discretion.

### **Methods of Data Analysis**

All data collected from these structured interviews was presented qualitatively based on interpretive analysis. Audio recordings of interviews with museum coordinators was manually transcribed and included in this thesis fully, in part to serve as a resource for schools and communities in the hopes that it would increase their involvement with museums. Specific comparisons were drawn between pedagogical paradigms previously outlined and the available programs and educational outcomes described by coordinators with the purpose of reiterating to schools the theoretically-based enhancements museum participation may make on classroom study. This section on program availability was also be used to design the handbook found in the appendix.



Subsequent responses were interpretively analyzed to determine the success of the programs in the context of their social/emotional benefits and community outreach efforts. The analysis based evidence of success on the employment of theoretical frameworks and the ability to substantiate clear improvements as a result of these programs.

Data collected from teacher surveys included both qualitative and quantitative analysis with the purpose of determining areas for improvement in the museum/school partnership. Free response items such as, “what role, if any, do museums play in your teaching, describe what you believe your students got from the experience, and what would educators like to see that may increase participation in museum programs,” were assessed qualitatively. These questions allowed for the interpretation of how teachers use museums and their attitudes toward them, which gave critical information on how to strengthen partnerships and what issues may need to be addressed. Information on what programs teachers are using helped gather data on what programs to continue or increase in funding, or conversely which programs may need improvement. Asking educators what they would like to see from museums created an open dialogue between schools and museums that could be used to improve partnerships and therefore the entire education system. Responses to this question were used in tandem with the responses by museum educators on what can be done to increase participation; comparing insight from both parties helped to define areas for improvement and create realistic collaboration.

Demographic information, such as school type, grade level, and subject area, as well as reasoning for not partaking in museum programs was analyzed quantitatively

using pie charts. This visual representation of demographic information determined discrepancies in specific school types, grade levels, or subject matters in terms of museum program participation. Specific patterns in this data indicated a lack of relevant programming or outreach to target groups, as well as a lack of support from schools to engage in these programs. Survey questions examining reasons for lack of participation were also analyzed in this way to gather direct evidence that can be applied to improving partnerships and resource availability.

### **Limitations of Current Study**

Due to the time constraints of this project, there are a few limitations that must be acknowledged. First, while the museum education coordinators being interviewed are professionals in their field, they may not have personally designed the courses and programs that are offered, and therefore may not be knowledgeable on the specific theories and frameworks that went into their design. Their responses to interview questions must therefore be taken at face value, while they may be lacking in classical theory.

Surveys for K-12 teachers were sent to both public and private schools in and around the Chicagoland area, however all research involving Chicago Public Schools (CPS) must first be reviewed by the Research Review Board (RRB). Time constraints of this project made review by the RRB unfeasible, and therefore data from CPS teachers was not collected. Data collected on museum use by schools was limited to private schools in Chicago, as well as suburban public and private schools. As CPS is the main demographic targeted by Chicago museums, the lack of data collected from this group

may have had an impact the validity of the study in that all results may not be generalizable or applicable to them.

## **CHAPTER IV: Research Findings**

### **Presentation of Data**

This study sought to investigate the role of museums in schools and communities through an analysis of program offerings, the pedagogical basis behind such programs, the usage of these programs by target audiences, and the observable outcomes of program participation. Data was collected from both museum education departments as well as K-12 teachers in order to highlight multiple perspectives on these themes. Data from museum education departments was collected via structured interviews and will be presented qualitatively to discuss the approaches and outcomes of alternative teaching practices. Data from K-12 teachers was collected through an anonymous survey which will be presented both quantitatively, to show participant demographics in terms of school type and subject matter, and qualitatively, to discuss program usage and non-usage. Both sets of data were individually analyzed to determine any patterns in program methodology, usage, and outcomes, then comparatively analyzed to determine areas for improvement and increased collaboration and communication between institutions.

### **Interviews with Museum Education Departments**

Four interviews took place with representatives from the education departments of the American Alliance of Museums (AAoM), the Art Institute of Chicago, the Shedd Aquarium, and the DuSable Black History Museum and Education Center. The representatives included directors and associate directors of education, directors of education leadership committees for non-profit organizations, and museum learning specialists—all qualified experts in the field of museum education and program

development and outreach. These interviews provided data on the educational philosophies and approaches of informal spaces, in contrast to traditional school settings, as well as the transformative power of these institutions within their communities.

### **Program Offerings for K-12 Students and Teachers**

Education coordinators were asked to briefly describe the available programs offered to K-12 students and teachers. All participants began by discussing field trip opportunities—the most common offering at museums; all museums offer docent or self-led tours, such as walk-throughs of historical sites, art exhibits, curatorial programs, and live animal exhibits. Many of these sequential tours are accompanied by supplementary materials (such as worksheets or discussion questions) that teachers can use to introduce a topic, as a follow-up activity, or to guide throughout a lesson, and can either be found online on museum websites or are provided to students during in-person excursions. These may include programs such as “Tech Treks” at the Shedd Aquarium, which provide students with tablets to guide them through the exhibits while answering specific questions about their observations, the “Art & Activism” exhibit at the Art Institute, which offers discussion questions about expression and representation, paired with certain art pieces that students can find throughout the museum, or tailored tours at the DuSable Museum for individual teachers based on their curriculum, with resources teachers can use to continue to discuss diversity in their classrooms throughout the year.

Each of the museums under study offer several multimodal programs that incorporate a mix of visual, auditory, and tactile experiences. Visual learning is

supported by movies on enslavement premiering at the DuSable Museum, taking in a range of artistic styles and pieces at the Art Institute, or observing the wetland ecosystem on the Chicago River's Wild Mile with the Shedd Aquarium. The DuSable Museum hosts opportunities for auditory learning experiences with storytelling and poetry slams and musical performances, which also expand students' understanding of how different cultures share their histories and struggles. The Art Institute is particularly inclusive of different learning needs, offering listening systems and audio guides for visitors with special auditory needs, and an Art & Access program geared toward visitors with sensory processing disorders, in which they can use TacTiles Kits or download sensory maps to help them find supporting areas around the museum.

Programs that travel directly to schools were offered by each museum sampled, including bringing squid and walleye dissection kits from the Shedd Aquarium, or guest speakers and docents with primary source materials from the Art Institute and DuSable Museum. With the onset of Covid-19, these traveling programs have been much more difficult to implement, but most museums are working to bring these back on a larger scale in the next school year, according to AAoM. While some program availability declined as a result of the pandemic, others, such as virtual programming, skyrocketed. "An immense amount of work has gone into translating existing programming into the virtual realm", noted one education director, such as hosting live webinars and lectures online for both students and teachers, interactive virtual tours of museums, or museum websites publishing full, ready-to-use lesson plans. While it was acknowledged that virtual programs do not offer quite the same experience as in-person programs, their

quality has greatly improved since the start of the pandemic and their reach will continue to grow, especially for larger museums.

Many of these museums partner directly with certain schools or districts to provide tailored, relevant programming or assistance to increase accessibility. The Shedd Aquarium, for example, design their programs based on Amplify's Next Generation Science Standards (NGSS), which are followed by many Illinois schools to improve science skills. Similarly, the DuSable Museum focuses on teachers and students within the community by partnering with CPS curriculum developers to design programs, or creating custom lessons and tours upon request, an offering that creates a meaningful, personal learning experience unique to smaller museums. "[It's all about] student voice and choice...choosing pieces that directly connect to student lives," explains the Art Institute; the Shedd Aquarium has taken this commitment to student voice seriously with their Teen Council, a free board that students can join to discuss the programs they would like to see at the museum, while building connections with community members and science professionals. These spaces are working to be even more accessible by partnering directly with certain schools and securing donor relations that help eliminate program fees and provide free bussing; the Shedd Aquarium launched another program called Shedd Academy, in which schools can apply to become "learning partners" with the museum and receive enrichment and mentorship resources that support students' learning and social/emotional needs without the burden of program cost or travel fees. Museums are keenly aware of their accessibility issues, explains the Shedd Aquarium, so widening the reach of these programs has become a high priority for many museums.

Each museum representative discussed robust professional development and teacher support programs that incorporate interdisciplinary curriculum building and highlight teacher voice. Some of the programs discussed include workshops hosted by the Art Institute that work with teachers to integrate art into lessons across subject area, diversity and inclusion training with the DuSable Museum on how to create safe spaces within schools, or the Teacher and Administrator Advisory Council through the Shedd Aquarium that serves as a sounding board to voice feedback and ideas and discuss critical education issues that can be served by the Shedd. Such programs are designed to cater to the needs of a range of schools, as they each have offerings in-person, virtually, or that will travel directly to schools.

### **Going Beyond Traditional Classroom Learning**

It is clear that museums have vast program opportunities for students and teachers, but what makes these programs stand out is their alternative pedagogical approaches that offer more nuance than traditional classroom settings;

“what we know from learning science is that the kinds of pedagogies we are traditionally using in the K-12 settings are not...the best ways to teach or to learn, and very often what’s happening at museums is much closer to what learning science tells us is the best practice—more active, engaging, [emotional], socially interactive, meaningful, [with] direct connections to what has meaning in our lives, and much more likely to be community based as opposed to curriculum based,”

said AAoM. Schools are often bound by strict schedules and state standards, which has created a “teach to the test” mentality that forces “rote memorization, regurgitation, and a lack of creativity”, all of which takes away from learning and truly experiencing. Museums have much more freedom in this sense, allowing for a more “authentic learning experience” where students have time just to explore and have fun, which



leaves them with positive experiences at these spaces, so they want to come back. “Place is so important [in learning],” stressed AAoM, and museums simply have the capacity to provide more immersive opportunities and fieldwork experience with real artifacts, state of the art tools, and mentoring by field professionals, than do classrooms. Many museums also have the ability to cater to a more diverse group of students whose needs may not be met in the traditional school setting, with multimodal engagement and accommodations for learning disabilities. The Art Institute was clear that the intention of museums is more about complimenting school programs, rather than outdoing them—it’s a collaborative effort and many museums simply have the capacity, time, and funding to support these experiences where schools and teachers may not be able.

### **Educational Benefits of Museum Programs**

There was great consensus by interviewees on the educational benefits of museum programs, which all consisted of real-world, application-based skills. The DuSable Museum credited creative active learning practices with the development of critical thinking skills; “African-centered education values critical thinking—it’s not about performing intelligence, as much as it is about mastering knowledge...[it] teaches students they *are* intelligent. Intelligence is not perform[ative]”. Active learning is about “mak[ing] practical use of knowledge...applying [it] to benefit society and being able to articulate that”. African and other active-centered learning approaches think of the “world as a classroom”, according to the DuSable Museum, which helps students see an opportunity for education anywhere and everywhere. Practical application is also gained as students make connections with professionals in different fields to gain field experience or explore future educational and career opportunities. In order to apply

such knowledge, students gain inquiry-based skills, such as problem-solving, observation, investigation, and interpretation. The multimodal program offerings have clear benefits across the spectrum of literacy skills as well, as students are able to learn that language of a space and translate these skills across text-based, digital, and visual materials. Because a majority of museum programs are designed with state and national standards in mind, students are still gaining all the necessary skills those outline, but the alternative approach is more meaningful in creating inquisitive, autonomous learners.

### **Social Benefits of Museum Programs**

Because most active learning programs incorporate group work and peer interaction, an obvious social benefit is improved communication skills—students meet new people of all backgrounds, and they practice becoming comfortable engaging in conversation. With the Art Institute’s particularly accommodating programming for visitors with disabilities, a major social benefit is confidence in navigating a space and feeling supported by the community. The most discussed topic by all museums sampled was the opportunity for diverse cultural experiences, which has a host of social benefits. Many schools are very homogenous, which means a lot of students are lacking exposure to other cultures and perspectives; working with people of different backgrounds teaches students to work collaboratively and cooperatively, even in the face of challenges, and recognize the unique purpose of others. Museum programs have been specifically designed with equity and cultural diversity in mind; “museums have been changing their philosophies—the stories we tell, whose voices are included,” said the Art Institute. Education directors from the DuSable Museum were able to offer their unique

expertise on the benefits of cultural diversity and inclusion, explaining traditional institutions as being designed by and for Europeans—“and while that is valuable,” they said, “it does not include other perspectives”. Culturally immersive programs are validating for people of color, as they can see themselves in the programs, which helps them to understand themselves better and creates a sense of agency and belonging. For white visitors, they are able to learn more about other perspectives and lived experiences, which can also help them learn more about themselves as well. These programs provide students with the opportunity for personal reflection, helping them become more self-aware and understanding of others. The DuSable Museum described these approaches to education as healing; many students do not have a good relationship with or feel supported by the school system, which takes a didactic approach and excludes diverse voices. These programs focus on “trauma repair”, and once students feel they are part of a community that supports and appreciates them for who they are, rather than a broken system that overlooks them, they want to learn and they want to create the best version of themselves and their communities.

### **Use of Museum Programs by K-12 Schools**

When asked if schools are taking full advantage of program offerings, there was less consensus among the museum representatives. The American Alliance of Museums, the Art Institute, and the Shedd Aquarium strongly agreed that programs were not being used to their fullest, but all acknowledged that both parties were mutually responsible for this. All agreed that museums are not nearly communicative enough with schools about available programs and how to create partnerships, which is largely due to staffing shortages. Inaccessibility was again mentioned, as many schools

who might want to participate are too far to travel to the museums in person, and even with the uptick in virtual offerings since the onset of Covid-19, in-person programming is still the focus of many museums (Covid-19 was a major factor in the decline of program participation, but the interviewees expect a return to normal or near-normal numbers in the next one to two school years). Each interviewee acknowledged that teachers, on the other hand, may feel confined by time and budget constraints, as well as the fixation on standardized test scores and preparation, making museum visits a low priority. Both the Art Institute and Shedd Aquarium agreed, however, that if teachers were committed to taking part in these opportunities, they would find that beneficial programs aligning with curriculum standards are actually plentiful. The Shedd Aquarium noted that schools partnering with the museum through Shedd Academy were taking full advantage over schools not in the program. In contrast, the DuSable Museum stated that they are used to full capacity, and many times they are overloaded. They explained the reasons for this may be that they are a smaller museum, so they have less capacity to begin with. As programs on racial identity and equality have become increasingly sought after in recent years, and the museum's busiest times are around Juneteenth and Black History Month, high participation is in part due to their unique focus.

### **Community Outreach Through Museums**

While each of the museums surveyed offer a range of community outreach programs, their scopes varied. Each museum offers free entry days for special groups, including Illinois residents, CPS students, educators, or teens. The Art Institute and the Shedd Aquarium are also working on research programs to identify communities that

are underutilizing the museums or under resourced and could benefit from the programs offered, and targeting their advertising toward those communities or traveling directly to those neighborhoods. With this research, the Shedd designed an early access program that offers free or early registration to visitors who are part of the WIC program or who live in Section 8 housing, for example. “Zoos and aquariums historically have difficulty reaching diverse audiences,” acknowledged the Shedd Aquarium, but these programs are the first step to eliminating barriers. Also discussed were events and celebrations that take place within neighborhoods and communities, such as the Kayak for Conservation program through the Shedd that offers a learning experience about the history and ecological makeup of the Chicago River, while cleaning the river of litter, the Martin Luther King Jr. Day celebration through the Art Institute that brings Chicagoans together to share their experiences and emotions in an artistic way, or the annual Juneteenth BBQ & Block Party at the DuSable Museum that celebrates Black culture through food, music, and storytelling. Each of these outreach programs are intergenerational, and they celebrate our histories and cultures, acknowledging our diversity, and draw attention to critical issues within the community to bring members closer together.

Robust museum outreach is dependent on partnerships with other organizations throughout the community; specifically mentioned were partnerships with After School Matters and Chicago Public Libraries to provide students and families with after-school and summer learning and community engagement opportunities, the Chicago Parks Department, through which event spaces and cleanup programs are organized, or the Special Olympics, which paired with the Art Institute to give tours to visitors with

disabilities and help them gain confidence in navigating spaces and draw attention to special programming. The DuSable Museum offered a unique perspective on community engagement through museum partnerships in that historically, the Black community has felt marginalized from museums and other spaces, so the DuSable Museum serves as the trusted institution to build these bridges. One particular partnership is with the University of Chicago Cancer Center to share healthcare information that can be trusted by the Black community; the education director at the DuSable Museum explains,

“...because we understand, the scars of racism...this is a unique thing that only we can do. Other people can do Black or African centered programming, but do they have people who have concentrated their time to understanding the injuries, on paying attention to the pattern? Even in good faith you can do something and still cause harm if you are not aware of the patterns. We are of the community, we are from the community, always with the community at the center of all of our efforts. That’s what’s different, our community outreach is grassroots as opposed to top-down...That is always done to Black people, so we don’t do that”.

DuSable brings all voices to the table; “we want everybody to have a mic to share out,” they said, which is why this museum is a particularly safe space. Their engagement events are often hosted by people from the community and who were educated through the community, as opposed to Harvard or Stanford. And while the director acknowledges that other museums have done the work to be culturally sustaining, it still might not tell the whole story.

“One thing that is unique is our reach, we can reach deeper. Most people who are trained in white structured systems have been affirmed by whiteness. But those aren’t our heroes, those are the heroes that people want to give us, that white people give us and Black people who are trained in white spaces give us, we go get the other people. We don’t devalue those people just because they come from those spaces, but we bring [all] voices,”

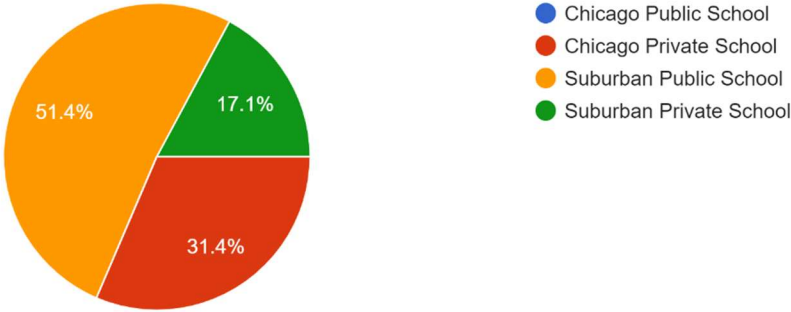
they explained. The structure of this space allows them to be more intentional with what they do—it’s more intimate, and there is purpose for all the programming they release. They explain that the community feels this, and they feel that the museum wants them to be there.

**Surveys from K-12 Teachers**

Surveys were sent to K-12 teachers from public and private schools in Chicago and the surrounding suburbs (excluding Chicago Public Schools). Survey data was analyzed to determine any patterns in museum participation and feedback based on school type, grade level, or subject taught. Anonymous survey data was collected from 105 participants, consisting of fifty-four suburban public school teachers (51.4%), thirty-three Chicago private school teachers (31.4%), and eighteen suburban private school teachers (17.1%) (Figure 2).

**Figure 2:** School Type Survey Responses

Please select the option that best describes your school:  
105 responses

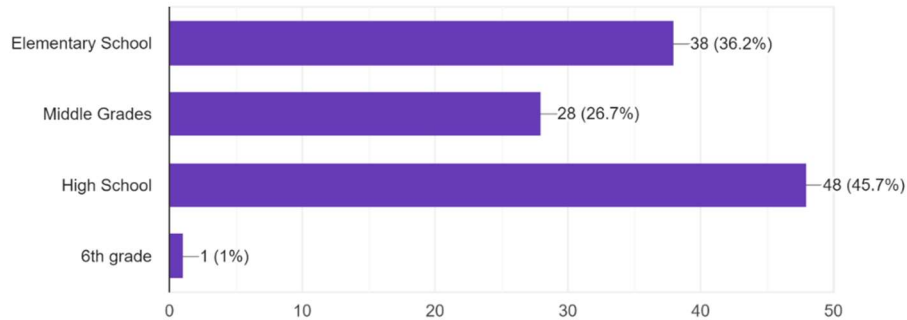


Of these participants, thirty-eight teach elementary school (36.2%), twenty-eight teach middle school (26.7%), and forty-eight teach high school (45.7%), with a

considerable number of teachers that fall into more than one of these grade level categories (Figure 3).

**Figure 3: Grade Level Survey Responses**

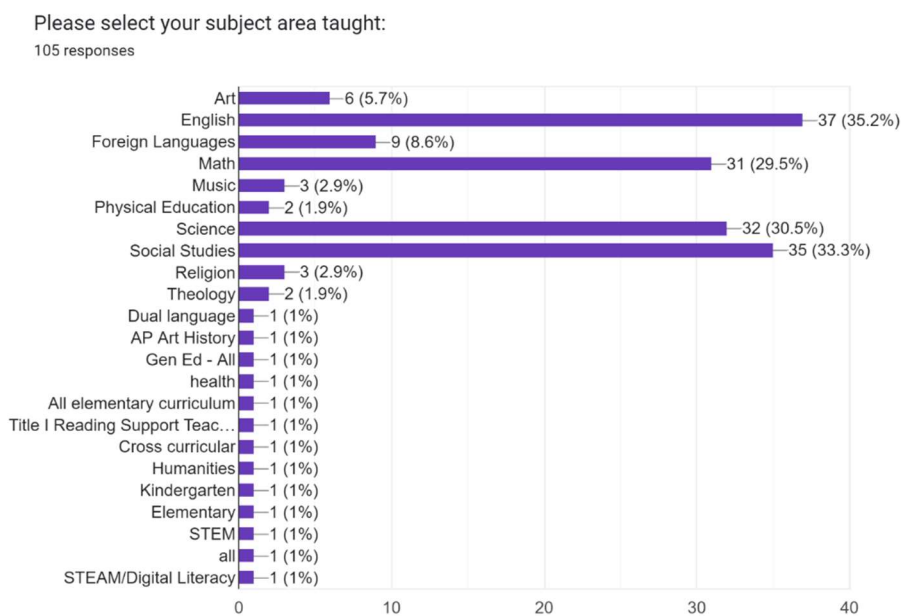
Please select your grade level taught:  
105 responses



Reports on subject area taught varied widely, with responses including thirty-seven English (35.2%), thirty-five social studies (33.3%), thirty-two science (30.5%), thirty-one math (29.5), nine foreign language (8.6%), six art (5.7%), five theology/religious studies (4.8%), three music (2.9%), and two physical education teachers (1.9%), with several niche areas accounting for 1% or less and approximately five teachers reporting general education/all subjects. Responses indicate that a considerable number of teachers fall into more than of these subject areas (Figure 4).



**Figure 4:** Subject Area Survey Responses



When asked what role museums play in their teaching, participant responses varied widely. The most common answer, with approximately forty responses, was that museums play very little or no role, while less than ten participants reported that museums play a substantial role in their teaching. In-person field trips were reported as the most common role of museums (approximately twenty responses), although teachers take part in these experiences for several reasons. Primarily, museums are used to give students hands-on experience with artifacts and real field experience that could not be simulated at school. Many teachers reported that museums are the primary tool they use to teach respect for culture and diversity, as they provide great resources to encourage perspective taking and appreciation for artifacts. With many teachers working with a range of student abilities but limited classroom supplies, museums are often used for their multimodal equipment that reaches many different

types of learners, and these experiences encourage independent exploration, curiosity, and a renewed appreciation for learning. Several teachers reportedly use field trips for changes of scenery from the classroom or rewards for good behavior and academic work. Most teachers who reported using museums for field trips expressed that they are often used as a culminating experience at the end of units.

The next common role of museums in the classroom were online resources (approximately fifteen responses), which were reportedly used much more frequently since the Covid-19 Pandemic due to the inability for most schools to visit to museums in person and the increase in available online content provided by museums to maintain engagement. Online resources are reportedly used primarily out of convenience, as schools do not have to travel to museum sites, teachers are not responsible for coordinating trips, planning schedules, and monitoring students off-campus, and online programs are more time and cost efficient, as they can be altered to fit a single class period rather than a full-day field trip, and they eliminate the program and travel costs of in-person trips.

Some teachers (five responses) reported using museums for their own professional development and preparation. These included traveling to museums on their own time to learn more about their subject area in order to enhance their teaching in the classroom, attending professional development seminars and workshops hosted by museums, and utilizing lesson plans that are published on museums websites.

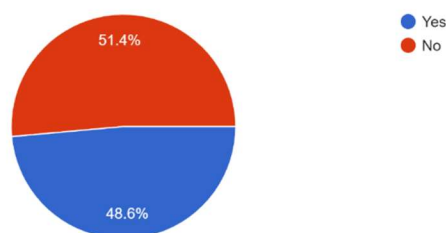
A small number of teachers (three responses) indicated that while there are time and budget constraints that don't allow museums to take an active role during class

time, they frequently recommend and share available programs that their students can visit after school, on weekends, or over the summer.

Participating teachers were asked if they had taken their students to a museum in the past school year, or in school years prior to Covid-19, to account for the inability of most schools to travel off-campus since the onset of the pandemic. Figure 5 indicates that fifty-four participants (51.4%) have not taken their students to a museum recently, while fifty-one participants (48.6%) have. Analysis of these data was cross-referenced with data on school type, grade level, and subject area taught in order to indicate any trends. Private schools surveyed were much more likely to take their students to museums than public schools, with 66.7% of private schools and 31.5% of public schools answering “yes” to this question. Schools surveyed in Chicago were much more likely to take their students to museums than schools surveyed in the suburbs, with 66.7% of Chicago teachers and 40.3% of suburban teachers answering “yes” to this question. Middle school teachers were somewhat more likely to take their students to museums than elementary and high school teachers, with 64.3% of middle, 50% of elementary, and 39.6% of high school teachers answering “yes” to this question. Math teachers across all grade levels and school types were the least likely to take their students to museums, with only 28.6% answering “yes”, while foreign language teachers were the most likely, with 85.7% answering “yes”; there were no other discernable disparities between subject area taught and museum visitation.

**Figure 5:** Museum Participation Survey Responses

Have you taken your students to a museum in the past school year, or in school years pre-Covid-19?  
105 responses



Teachers who reported that they had taken their students to museums in the previous survey question were asked which museums and programs they had utilized, and what observable outcomes of the experiences were for their students. A wide range of museums were visited, with some of the most common being the Art Institute of Chicago, the Museum of Science and Industry, the Shedd Aquarium, the Field Museum, and the Illinois Holocaust Museum. The reported outcomes can be broken down into several common themes, including: connecting learning to real-world application, cultural immersion, improved real-world and classroom skills, independence, improved social skills, and fun learning experiences. Connecting learning to real-world application includes interacting with and examining real artifacts that are inaccessible in schools, such as original art pieces, historical documents, or state of the art tools and equipment. Students were able to engage in field work and practice professional skills in laboratory and other immersive settings, such as operating equipment and machinery at the Adler Planetarium, taking part in marine animal dissection at the Shedd Aquarium, and finding and measuring the foci of ellipses in ecological settings with the Museum of Science and Industry. Speaking to professionals in their fields, museum

experts and docents, and survivors allowed students to see how curriculum can be applied outside of the classroom, and familiarized them with possible careers paths in areas about which they are passionate. The most common outcome reported was that museum programs brought learning to life by connecting curriculum to experiences outside of the classroom in a hands-on way.

History and art museums were primarily used for immersing students in rich cultural experiences; through engagement with diverse primary source material (art, clothing, food, tools, etc.), many teachers reported that their students gained a new understanding and respect for other cultures and perspectives that differ from their own. Exhibits that highlight the struggles and trauma of certain groups allowed students to gain understanding of the lived experience of those individuals and consider human rights in a more emotional way than a classroom lesson or textbook might allow; specifically mentioned were meeting a Holocaust survivor and walking through the railway cars at the Holocaust Museum, visiting an immersive exhibit of African art at the Art Institute, and an immersive exhibit of Native American history at the Raupp Museum. Several teachers noted that these experiences helped their students discuss culture and diversity more openly and become more open minded in their thinking.

Improvement in real-world and classroom skills includes critical thinking, innovation and creativity, inquiry and investigative skills, and assessment of source material. Throughout many museum activities, open-ended, thought-provoking questions were posed to students (usually via worksheets or verbally by docents) that made them think deeply about material being presented and the groups or places that the material reflected. Science museums (including the Shedd Aquarium and the

Museum of Science and Industry) were particularly mentioned for challenging students to solve real-world problems with innovative, creative solutions, such as mitigating plastic pollution in the ocean. Many teachers reported that museums allowed students to explore how and why things happen, whether it be how motion and force work, what is causing a certain disease in a Lake Michigan fish population, or how issues of discrimination can be solved. Art and history museums were noted for their use of primary source material, which are inaccessible in many classroom settings; not only did these sources make students feel more connected to the activities and the lived experience of the artists and authors, but they learned the importance of primary sources in adding context to a topic and gained important skills about how to assess the legitimacy of these sources.

Many teachers who let their students explore museums individually reported observing a sense of autonomy they had not previously seen in their students. After their museum visits, they noticed their students being more curious and passionate about particular subject matters, taking more initiative in their own learning, and being more interested and eager to learn overall.

In addition to gaining autonomous learning skills, teachers also reported improvements in social skills and group cooperation. Many museum programs required students to work together to answer questions or solve a problem, such as designing a trash collector as a group or finding the next clue on a jellyfish scavenger hunt at the Shedd Aquarium. Through working with others that may have different ideas and perspectives, students were able to practice group collaboration and peacefully overcoming conflict. After visiting exhibits that discussed discrimination and

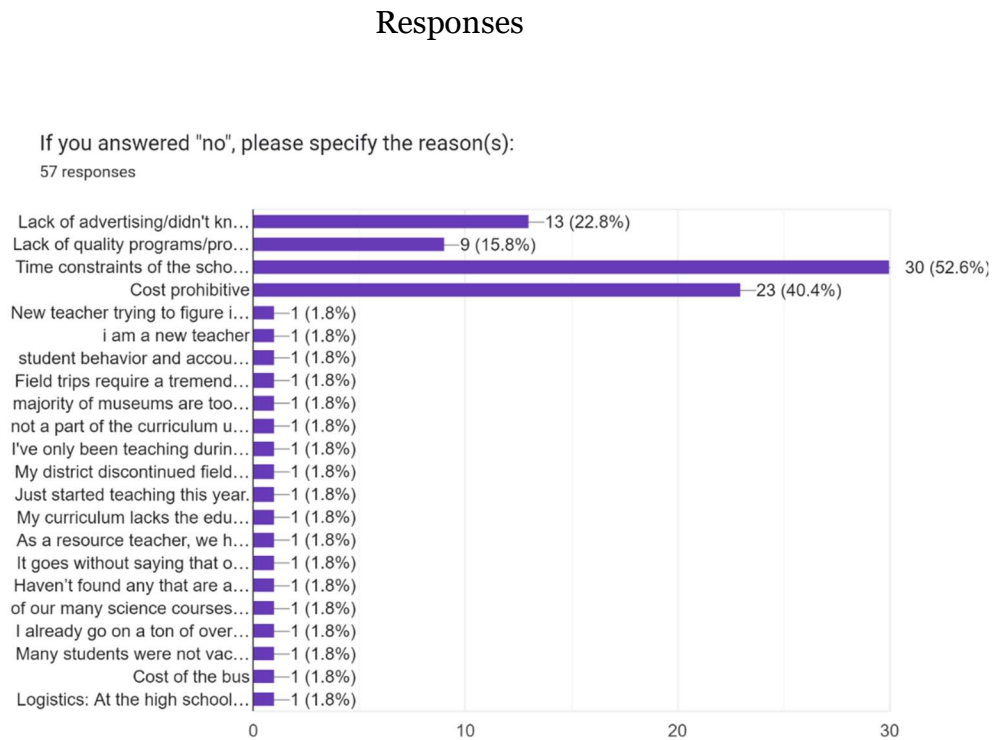
community struggle, such as listening to survivor stories at the Illinois Holocaust Museum, one teacher noticed that their students were more compassionate and stood up for those being bullied at their school more often.

A few teachers discussed using museums purely for fun experiences and giving their students a chance to get out of the school building for a day. The change of scenery can keep learning interesting, exciting, and engaging, they reported.

In contrast, teachers who answered that they had not recently taken their students to a museum were asked to specify their reasons for not participating (Figure 6). Thirty teachers responded this was due to the time constraints of the 180-day school year that does not allow for days off from standard curriculum and test preparation—the most common response collected in this survey. Twenty-three teachers responded that museum trips are cost prohibitive, both in terms of program cost and travel/bus cost. Thirteen teachers reported not knowing what programs were available due to lack of advertising on the part of museums. Nine teachers reported that their local museums do not offer quality programs that are geared towards their curriculum or grade level. Many teachers who submitted their own responses to this question indicated the tremendous amount of work and responsibility field trips require on their part, which has deterred them from taking on the challenge; specific responses from this category include being responsible for students off-campus and managing their behavior, finding chaperones, commitments to other school functions, and being new to teaching without yet having the expertise to find and arrange trips. Some responses indicated the difficulties of arranging museum visits since Covid-19 due to health and safety concerns and the challenge of making sure all students follow guidelines. Other responses noted

that their district or administration prohibits field trips and that many museums are too far away.

**Figure 6:** Reasons for Not Participating in Museum Programs Survey



All survey participants were asked for feedback to improve their relationships with museums and increase their likelihood of taking part in available programs. Responses can be categorized into eight major themes: more specific programming, financial aid, more advertising, better support for teachers, easier accessibility, more hands-on exhibits, more virtual programming, and availability of after-school programs. The most common feedback from teachers was that museum programs do not always align with their state standards and curriculum, or are often not age appropriate; many suggested introducing new exhibits or programs that are designed to meet specific standards or accommodate specific grade levels.



Issues of affordability ranked high, as many teachers reported that they would visit museums more often if there were available grants, scholarships, or donors to cover program costs, more free days or programs, or if museums provided bussing services to eliminate those exorbitant costs for schools. Several participants noted that they work in low-income districts, which make museum visits and other field trips unfeasible.

Several teachers reported that they do not always know when new exhibits are released or what programs are available due to lack of advertising, and suggestions included newsletters to teachers, online forums and social media pages where teachers can communicate and share programs and experiences, and liaisons that come to schools to discuss museum programming with teachers and administrators.

Feedback indicating the desire for more teacher support included museums providing more ready-to-use lesson plans and supplemental materials that could be used in the classroom and professional development workshops to familiarize teachers with material and ways to use programs. In relation to the high volume of responses indicating that teachers often do not have the time or capacity to search for and schedule trips, many participants would like to see museums have specific positions for “field trip coordinators” that handle the logistics of scheduling visits.

On-site museum programs are simply inaccessible for many teachers due to time constraints, budgeting issues, travel logistics, and health and safety concerns in relation to Covid-19. To mitigate these, several teachers expressed their desire for museums to come directly to schools with traveling exhibits and artifacts or guest speakers. Shuttle services provided by museums were suggested by teachers whose schools are located in areas where public transportation is inaccessible.

While interactive, hands-on programming was a major reason why many teachers reported using museums, others reported that these types of programs were lacking. This feedback was particularly common from math teachers, and those outside of the history and science areas in general.

For teachers who expressed difficulty taking their students to museums in person due to time constraints, lack of support by their administration, or health and safety concerns in relation to Covid-19, feedback indicated the desire for a wider range of program options. Several teachers suggested more virtual programming they could use in the classroom, and some would like to see after-school programming that students could attend.

## **CHAPTER V: Discussion and Conclusion**

### **Restatement of Purpose**

This project was completed with the hope of creating stronger partnerships between museums, schools, and communities, and its findings and practical use are dedicated to each of them. Articulating the role museums play in creating positive, equitable, and sustaining educational and community initiatives is crucial to this purpose. While robust programming may exist, it is often not being used to its full potential, which necessitates a review of what holds prospective visitors back and what can be done to meet their needs. Multiple perspectives are repeatedly and systematically left out of the conversation on educational improvement; this project sought to highlight diverse voices in both the museum and school realms in order to collect well-rounded, valid data, as well as create a space for open communication and collaboration between institutions. When educators know what programs are available, they are more likely to seek out museums for their teaching needs; conversely, when museums know what schools and communities need from them, they are able to create initiatives that are more intentional and supportive to meet that feedback.

The successful future of our education system, and ultimately a healthy society, is dependent upon progressive pedagogical and community reform efforts, and museums have the power to effectuate these (Hein, 2006, p. 348; Hein, 2013, p. 63).

### **Discussion of Findings in Relation to Existing Literature**

Data collected through this research largely aligned with previous literature findings, indicating a widespread dissatisfaction with the structure of the school system

and the lack of autonomy it affords educators in preparing students with the necessary skills to become pragmatic, empathetic, well-rounded members of society. Research further indicated that nearly every pedagogical method educational experts deem critical to these modern learning goals are at the very core of museum philosophies and practices.

Members of each participant group expressed dissatisfaction with the structure of the school system, relating specifically to policies brought about through NCLB. Museum educators speculated that the fixation on standardized testing makes informal learning experiences a low priority, which was verified by K-12 teachers who reported that the perpetuation of outdated pedagogical methods and lack of variation in the curriculum had to do with the inability to deviate from strict test preparation schedules. The representative from AAoM was clear that the current pedagogies carried out in school settings are the furthest thing from best practice; learning scientists agree that test-based methods are not only outdated, but they “corrupt the learning process” and can be harmful to student development (Ravitch, 2010, p. 2). These approaches are “antithetical to real education,” says Ravitch (2010), and have all but destroyed curiosity, creativity, and human connection in the school setting; where schools fall short in these ways, museums were able to fill the gaps (p.5).

Returning to Hancock and Zubrick’s (2015) Conceptual Diagram of Engagement (Figure 1), data collected from museums and teachers addresses every domain outlined. At the content level, affective and emotional needs are met through informal, activity-based learning that allows for creativity, student-choice, and exploration of personally relevant material, and eschew scores as indicators of student success and value. At the

school level, this domain is met through culturally sustaining programming that encourages open, understanding partnerships with others of diverse backgrounds, as well as frequent self-reflection, in order to create an identity and a community. Behavioral disengagement is mitigated through experiential learning and the commitment to student-led programs, which create opportunities that students want to be present for. Cognitive factors are addressed through the real-world applicability of programs, proving to students that education is meaningful. Students' psychological investment in education is supported through special accommodations for learning needs, as well as the commitment to creating safe spaces, which express to students that museums want them there and value them as human beings (Hancock & Zubrick, 2015, p. 17).

Museum representatives each reiterated that while skills students gain through their programs may translate to test scores, the essence of their design is to rebut test-based teaching and passive learning in favor of more authentic learning experiences. Museums are intentional about using progressive pedagogy to create this authenticity, and the positive outcomes are evident. Representatives each discussed their main program goals for implementing authentic learning, which included real-world applicability, personal relevance, and freedom of choice for the development of critical thinking and moral reasoning skills, as well as sustained curiosity and respect for learning; teachers reported observing these same outcomes in their students after museum visits, indicating that museums' authentic learning goals were implemented successfully and in accordance with Herrington and Herrington's (2007) framework (pp. 69-70). These initiatives are built upon Dewey and Piaget's foundational

progressive and constructivist theories, demonstrating museums' fulfillment of recommendations by learning scientists, and the observable outcomes of these skills in students reflect their necessity (Ravitch, 2010).

Museums are inherently active learning sites; no museum program discussed by education coordinators involved passive learning, remaining stagnant in a space, or inflexible curriculum schedules. Rather, all museum programs keep visitors physically active with self or docent-led tours, the most common experience across all museum types; the presentation of complex, thought-provoking discussion through virtual or in-person supplemental activities, such as Shedd Aquarium's "Tech Treks" or the Art Institute's "Art & Activism" exhibit, keep visitors mentally active; interactive exhibits in which visitors are immersed by multimodal art pieces or can touch live animals keep visitors interested and engaged; student voice and choice to guide instruction and discussion and lead museum councils offers visitors a sense of control, each of which are in line with Michael's (2006) work modeling successful active learning (pp. 159-167). The education coordinators report using active pedagogy for the purpose of helping students recognize the opportunity for learning is everywhere and encourages them to seek out these opportunities in their lives, aligning with Munley's (2012) research showing sustaining intrinsic motivation for learning after active instruction (p. 6).

Inquiry-driven pedagogy was used in museums for the practical application of critical thinking, observation, and interpretation skills, reported both as program goals by museum representatives and observable outcomes by K-12 teachers. The DuSable Museum specifically credited inquiry-driven learning with the development of critical thinking skills in their visitors, as was also found in Hubbard's (2011) research specifying

this pedagogical method as the most straightforward approach to such skills (p.16). Pedaste (2015) further claimed that inquiry-driven pedagogy was the best method for helping students to articulate learning, echoed verbatim by the DuSable Museum, who reported students' ability to engage in conversation about their learning with others, discuss the practical implications of what they had learned, or express their learning creatively after participating in museum programs. As reported by their teachers, these museum experiences turned out students who are *engaged thinkers*, able to connect their learning to real-world and personal applications through creative questions and plans to improve society, such as Midwest students at the Shedd Aquarium who learned ways in which their own lives are affected by ocean pollution and were subsequently inspired to design projects to mitigate further degradation; *ethical citizens* who will lead the next generation in creating a more just world, as exposure to others' lived experience and diverse cultures at social studies and art museums encouraged more progressive thinking and questions about the root causes of prejudice, as well as a sense of social responsibility to defend and protect others experiencing prejudice at school; and *entrepreneurial spirits* in students who had never shown such investment and autonomy in the classroom now taking initiative in their own learning process, each highlighting the salient outcomes of inquiry-driven learning in museums documented by Friesen and Scott (2013).

Object-based learning was the most important reason K-12 teachers reported taking their students to museums due to the opportunity for hands-on experience with real artifacts and field experiences that could not be simulated at school. Herrington and Oliver (2000) highlighted the importance of object-based learning outside of the

formal school setting in helping students apply classroom learning to real-world practice; this was clear in students' subsequent connections to their daily lives and interest in possible career paths related to the topic learned about during their visit. In accordance with Dewey's educational theories and Herrington and Herrington's (2007) research, students were able to gain skills that expand beyond the confines of the classroom and transfer to real-world, pragmatic application, preparing them to live democratic, civically engaged, socially just lives (p. 70; Hein, 2012). Teachers' observed outcomes also coincided with research showing object-based pedagogy in museums promotes curiosity and a sense of independence in the learning experience, and in turn created deeper motivation and appreciation for learning overall, as students continued to reference their museum visits and asked recurring questions about the topics learned throughout the school year (Graham, 2008; Munley, 2012).

Technology was an indispensable tool in the museum learning process for both teachers and students. Teachers were able to use supplementary virtual materials from museum websites, such as guided tours, informational videos, and primary sources right in their own classrooms, which allows all students to engage in the learning process and gain digital literacy skills regardless of geography and school funding. Mirroring Othman's (2011) research, advanced technological tools, such as lab equipment and computer programs that were used in science museums such as the Shedd Aquarium, the Adler Planetarium, and the Museum of Science and Industry helped students to feel challenged and learn at a more intensive level than they are typically able at school, and teachers noticed that this sparked deeper interest in the material and its real-world applicability, as well as questions about related career paths (p. 95). A frequent



comment by K-12 teachers expressed the range of learning needs in their classrooms that they are simply unable to accommodate with what means they are provided in schools; in-person museum experiences, particularly at the Art Institute, provided such a range of multimodal learning tools that all students' needs were met, allowing for students who frequently feel left out of the learning process at school to feel supported and engaged in museums. Access to technology allowed for wider access to information, particularly for those who are often left behind in the school system, reiterating museums' essential role in democratizing the learning process (Othman, 2011; Hein, 2012).

Museums have been specifically designed to model sociocultural learning theory through programs that encourage peer collaboration and exposure to multiple perspectives, and the outcomes reported through interviews and surveys are consistent with Vygotsky's and other researchers' finding on the benefits of this pedagogical method. Museum educators explained the importance of social learning in fostering confident conversationalists, who may not engage in frequent peer interaction outside of museums due to an increasingly technologically absorbed society or traditionally didactic classroom teaching methods. Practice communicating with others in museum settings made students more confident speakers who engaged in conversation more readily, and in doing so, improved their cognition and critical thinking skills, mastered peaceful conflict resolution, became more self-aware, and felt more validated, as reported both by museum educators during programs and teachers upon returning to school settings following the programs; these skills are directly responsible for Rule's (2006) finding that students "achieve more learning outcomes and bring more richness

to” projects when engaged in collaborative learning (p. 6). Because museums are primarily used by teachers for perspective taking and cultural immersion, the progressive mindset and increased respect for others that students exhibited after exposure to and collaboration with others of diverse backgrounds maintains their “power over the preservation of democracy” (Ruhalahti, 2019, p. 22).

Each museum interview verified Lackoi’s (2016) claim that with an increasing need for community engagement efforts over the last decade, museums have stepped up to meet these needs (p. 93). Because each of these museums focuses their outreach on communities that have been traditionally marginalized from museum spaces, they do indeed play a role in reshaping narratives, creating new identities, and healing past trauma (Munro, 2015; Wallen & Docherty-Hughes, 2022). Multisectoral projects where museum work is performed in collaboration with the healthcare or higher education sectors have been shown to be effective to improve participants mental health and wellbeing, as reported by Wallen and Docherty-Hughes (2022), and the DuSable Museum has particularly provided such support for its members; museums are key assets to communities’ wellbeing in helping to meet local health and welfare goals and sustain the wellbeing of the public, and DuSable’s collaboration with the Chicago Cancer Center and other health and welfare organizations to establish a sense of trust with its members aligns seamlessly with these goals (Lackoi, 2016; p. 94). While the engagement programs discussed by each museum varied, their goals and outcomes matched previous findings in that they sought to build bridges across diverse communities, do critical identity work, and create safe spaces for their members.

“Public museums are positioned as institutions with social responsibilities, [which gives them] a role to play in creating and sustaining a healthy, happy population,” explains Munro (2013, p. 34). Museums aligned with every aspect of authentic, sociocultural learning initiatives, including peer collaboration, exposure to diverse perspectives and the lived experience of others, and acknowledgement of and support for underserved, marginalized communities. The very foundation of Dewey’s progressive pedagogy is built upon enriching education with socio-political context; learning in safe spaces that amplify and uplift the voices of the community members creates positive movement toward a society that is increasingly democratic and equitable (Hein, 2013, p. 63). Students were able to feel the intentionality in museum programs, and live out the connections they made in these programs (Yilmaz, 2007, pp. 331-337).

### **Analysis of Findings**

Review of the data indicated some significant patterns for further analysis. There is a major disconnect between schools and museum programming, as nearly all reasons for not attending museums and feedback for improvement given by teachers are already available at museums and in many cases make up the very essence of their programs. Programs that are free, will provide transportation, will travel directly to schools, are offered virtually, can fit in less than a single class period, and follow accepted standards all exist and are accessible for most schools. While it was acknowledged by both parties that museums could be doing more to actively promote and advertise their programs, detailed program offerings, including target audience, cost, travel, and contact information are expressly listed on museum websites, nearly all of which are user-

friendly and easy to navigate. Reasons for this disconnect, then, likely come down to museums not being valued in our educational system. The current structure may not allow teachers the time, energy, emotional capacity, or resources to prioritize museum participation.

There is clear consensus that educators (in both formal and informal settings) are discontent with many aspects of NCLB and related frameworks. Major issues that need to be addressed are the deprioritization of standardized testing, reintegration of arts and humanities, broader curriculum standards that allow more teacher agency, and a genuine commitment to vulnerable students. If the American Education System is actually committed to student learning, major reform led by teachers and other educational experts, rather than politicians and corporations, is necessary.

Museums have work to do too, however, in terms of program focus. While many museums offer robust program arsenals, direct connection to some subject areas—particularly math and English—is lacking. A commitment to designing more interdisciplinary programs that don't leave anyone out of the experience would make museums more well-rounded and accessible, and inevitably increase participation. Although larger museums may have more funding and therefore program offerings, they are often unable to provide as tailored or intimate of an experience as smaller, local museums. The DuSable Museum, for example, has less staff and funding than some of the larger museums in Chicago, however they have used this to their advantage to create much more personal and intentional interactions. They are able to hone in on the most meaningful opportunities and actually have more freedom to create programs that best suit the members of the community. Staff members at DuSable have established a

rapport with visitors and within the neighborhood, which oftentimes cannot be done by large museums on the same scale.

### **Implications of Study**

The entire foundation of our education system needs to be reimagined if we are to support diverse learners and instill in them the values of a democratic society. Our increasingly globalizing society and workforce requires individuals who can apply knowledge and solve problems in creative ways and communicate effectively, none of which are skills that are supported through memorization and rote learning (Education Reimagined, 2020). Ultimately, NCLB and related policies that promote the one-to-many teaching approach, standardized curriculum, and classroom contained instruction should be completely overhauled or eliminated (Education Reimagined, 2020).

Reconstructing the entire education system should not be seen as a radical proposal when decades of data and near desperate pleas by learning scientists, teachers, and students are taken into account. It is unrealistic, however, that an undertaking of this scale could be designed for the immediate future, or at all, as those who are calling for these changes are not often in a position to draw up public policy.

It is possible, however, to enact small changes that have powerful effects, and museum participation should be the first step. The most critical implication of this study is for all museums to hire liaisons that work directly with schools and community members to market available programs and do the work of scheduling visits. Schools also need to be more committed to museum usage and take greater initiative to create partnerships. These implications do come with certain challenges; New positions require funding, taking initiative to search for and book partnerships requires time, and

participation in programs suggests booking and travel fees. While these challenges are acknowledged, the positive outcome of these implications necessitates their immediate implementation. Funds will be returned as museums gain more visitors, most museum websites are straightforward and easy to navigate and programs can be found and booked quickly, and free programs and bussing accommodations are available. Active, experiential learning techniques do not necessarily need to be used every day to still generate extraordinary change, but the more ambitious we are in incorporating these objectives into our philosophy of education, the more successful our entire society will be; “therefore,” says Michael (2006), we should all begin to reform our teaching, employing those particular approaches to fostering active learning that match the needs of our students, our particular courses, and our own teaching styles and personalities. There are plenty of options from which we can choose, so there is no reason not to start (p. 165).”

### **Suggestions for Future Research**

A major limitation of this study was the inability to survey CPS teachers on the role museums play in their classrooms, as they are the major demographic aligned with Chicago museums. Although the schools surveyed also represent urban and highly diverse student populations, a follow-up study to collect feedback from Chicago museums’ target audience should be conducted to improve the validity of the current study. To expand upon the work that has already be done, further research looking into the outcomes of museum schools should be conducted. Museum schools partner directly with museums, and according to the National Association of Museum Schools, they “bring learning to life for a diverse group of P-12 students [by] engaging students in

learning opportunities that are interactive and meaningful,” and the work of the organization is dedicated “to bringing museum schools and museums together to share their experiences and expand impact throughout the country...and share the unique pedagogy and best practices of museum schools and their museum partners with all schools and all museums,” (National Association of Museum Schools, n.d.). A comparative analysis of the outcomes and measurable skills between students learning in museums schools and non-museum schools may further highlight the urgent need for these partnerships.

## **Conclusion**

This project was very special and personal for me—as both an educator and lover of museums, I feel compelled to share with others what have been metamorphic experiences for me, and encourage them to seek out these experiences as well. Increased museum exposure benefits everyone, and has transformative power over society. These spaces lived up to every aspect of collectivist and sociocultural learning theories, and showed clear evidence of their commitment to developing communities of civically engaged, democratically minded, pragmatic individuals. It was with great intention that this work sought to articulate the multifaceted nature of education; it does not look like any one thing and is not bound by a classroom or school setting. Education is an action by and for community—its success relies on the union of the community, and the health of the community relies on the enrichment of its members. As a major museum hub, Chicago is an ideal place to bring this transformation to fruition. It is my hope that teachers, students, learning scientists, policy makers, and all those who feel

connected to museums find this work useful for both personal reflection and to effect real progress.



## **APPENDIX: Chicago Museum Programs: A Handbook**

This handbook will serve as a guide for educators to navigate programs at select Chicago museums. Listings will be broken down by subject matter and audience, with links to information on cost, accessibility, and outcome. Please note that this handbook is not exhaustive and may not account for all seasonal or rotating exhibits and events.

## **STEM**

### **1. Adler Planetarium**

- Virtual
  - Grades K-4 virtual exhibits
    - <https://www.adlerplanetarium.org/visit/school-field-trips/virtual-field-trips-kindergarten-4th-grade/>
  - Grades 5-8 virtual exhibits
    - <https://www.adlerplanetarium.org/visit/school-field-trips/virtual-field-trips-5th-8th-grade/>
- Grades K-12
  - Field trip opportunities
    - <https://www.adlerplanetarium.org/visit/school-field-trips/field-trip-days/>
- Teens
  - <https://www.adlerplanetarium.org/learn/teens/teen-opportunities/>
- Family and community
  - <https://www.adlerplanetarium.org/learn/all-ages/>
- Educators
  - Downloadable lesson plans: elementary school
    - <https://www.adlerplanetarium.org/learn/educators/elementary-school-resources/>
  - Downloadable lesson plans: middle school
    - <https://www.adlerplanetarium.org/learn/educators/middle-school-resources/>
  - Downloadable lesson plans: high school
    - <https://www.adlerplanetarium.org/learn/educators/high-school-resources/>

### **2. Garfield Park Conservatory**

- Virtual
  - Digital tours
    - <https://garfieldconservatory.org/resource-center/digital-tours/>
- Grades K-12
  - Field trip opportunities
    - <https://garfieldconservatory.org/group-visits/school-field-trips/>
- Teens
  - Urban Roots program
    - <https://garfieldconservatory.org/about-us/urban-roots/>
- Adults
  - <https://garfieldconservatory.org/adult-programs/>
- Family and community

- Family programs
  - <https://garfieldconservatory.org/family-programs/>
- All ages exhibits
  - <https://garfieldconservatory.org/exhibits/>
- Fleurotica
  - <https://garfieldconservatory.org/fleurotica/>
- Educators
  - Downloadable resources
    - <https://garfieldconservatory.org/resource-center/>

### **3. Museum of Science and Industry**

- Virtual
  - <https://www.msichicago.org/education/field-trips/virtual-field-trips/registration/>
- Grades K-12
  - Field trip opportunities
    - <https://www.msichicago.org/education/field-trips/>
- Family and community
  - Science Initiative Program
    - <https://www.msichicago.org/education/welcome-to-science/>
  - Creativity and Innovation Programs
    - <https://www.msichicago.org/education/creativity-and-innovation/>
- Educators
  - Downloadable lesson plans
    - <https://www.msichicago.org/education/learning-resources/>
  - Professional development
    - <https://www.msichicago.org/education/professional-development/>
  - Learning partnerships
    - <https://www.msichicago.org/education/out-of-school-time/out-of-school-time-educator-program/>

### **4. Shedd Aquarium**

- Virtual
  - Animal encounters
    - <https://www.sheddaquarium.org/private-virtual-experiences>
  - All ages exhibits and resources
    - <https://www.sheddaquarium.org/learn-online-with-shedd>
- Grades K-2
  - Field trip opportunities
    - <https://www.sheddaquarium.org/educators/school-field-trips-and-learning-programs>
  - Summer camps

- <https://www.sheddaquarium.org/experiences/camp-shedd-summer-splash>
- Grades 3-5
  - Field trip opportunities
    - <https://www.sheddaquarium.org/educators/school-field-trips-and-learning-programs>
  - Summer camps
    - <https://www.sheddaquarium.org/experiences/camp-shedd-summer-splash>
- Grades 6-8
  - Field trip opportunities
    - <https://www.sheddaquarium.org/educators/school-field-trips-and-learning-programs>
  - Summer camps
    - <https://www.sheddaquarium.org/programs-and-events/camp-summer-road-trip>
- Grades 9-12
  - Field tip opportunities
    - <https://www.sheddaquarium.org/educators/school-field-trips-and-learning-programs>
  - Service opportunities
    - <https://www.sheddaquarium.org/programs-and-events#teens>
  - Traveling expeditions
    - <https://www.sheddaquarium.org/programs-and-events/shedd-adventures/marine-explorer-expedition>
- College students
  - <https://www.sheddaquarium.org/programs-and-events#college-students>
- Adults
  - <https://www.sheddaquarium.org/programs-and-events#adults>
- Family and Community
  - <https://www.sheddaquarium.org/programs-and-events#families>
- Educators
  - Downloadable lesson plans and curriculum
    - <https://www.sheddaquarium.org/educators/curricula-lesson-plans>
  - Teacher in-service
    - <https://www.sheddaquarium.org/educators/teacher-in-service>
  - Teacher and Administrator Advisory Council
    - <https://www.sheddaquarium.org/educators/learning-partnerships/teacher-advisory-council>
  - Learning partnerships

- <https://www.sheddaquarium.org/educators/learning-partnerships>
- Free educator tickets
  - <https://www.sheddaquarium.org/shedd-admission-teachers-administrators>

## **SOCIAL STUDIES**

### **1. Chicago Architecture Center**

- Grades K-8
  - Field trip opportunities
    - <https://www.architecture.org/learn/schools-teachers/field-trips-k-8/>
  - Summer camps
    - <https://www.architecture.org/learn/families/camps-and-classes/summer-camps/>
- Grades 9-12
  - Field trip opportunities
    - <https://www.architecture.org/learn/schools-teachers/field-trips-age-14/>
  - Teen programs
    - <https://www.architecture.org/learn/teens/teen-programs/>
  - Teen Fellowship Project
    - <https://www.architecture.org/learn/teens/teen-fellows/>
  - Annual competitions
    - <https://www.architecture.org/learn/teens/competitions/>
  - Summer camps
    - <https://www.architecture.org/learn/families/camps-and-classes/summer-camps/>
- Family and community
  - Festivals
    - <https://www.architecture.org/learn/families/festivals/>
  - Girls Build! Program
    - <https://www.architecture.org/learn/families/girls-build/>
- Educators
  - Downloadable resources
    - <https://www.architecture.org/learn/resources/buildings-of-chicago/>
    - <https://www.architecture.org/learn/resources/architecture-dictionary/a-d/>
  - Professional development
    - <https://www.architecture.org/learn/schools-teachers/training-curriculum/teacher-training-interest-form/>
  - Educator Advisory Committee

- <https://www.architecture.org/learn/schools-teachers/training-curriculum/educator-advisory-committee/>

## 2. Chicago History Museum

- Virtual
  - Students
    - <https://www.chicagohistory.org/education/field-trips/virtual-field-trips/>
  - Adults
    - <https://www.chicagohistory.org/visit/experience-history-together/virtual-group-presentations/>
- Grades K-12
  - <https://www.chicagohistory.org/education/field-trips/>
- Family and community
  - Chicago Learning Collaborative
    - <https://www.chicagohistory.org/chicago-learning-collaborative/>
- Educators
  - Downloadable resources
    - <https://www.chicagohistory.org/educators/?cat=classroom-resources>
  - Professional development
    - <https://www.chicagohistory.org/education/educator-programs/>

## 3. The DuSable Black History Museum and Education Center

- Virtual
  - [https://www.dusablemuseum.org/aiovg\\_videos/3541](https://www.dusablemuseum.org/aiovg_videos/3541)
- Family and community
  - All ages exhibits
    - <https://www.dusablemuseum.org/event/>
  - Community initiatives
    - <https://www.dusablemuseum.org/blog/>

## 4. Field Museum

- Virtual
  - <https://www.fieldmuseum.org/visit/field-trips>
- Grades K-12
  - Field trip opportunities
    - <https://www.fieldmuseum.org/visit/field-trips/registration/register-your-field-trip-group>
  - Summer camps
    - <https://www.fieldmuseum.org/summer-camps-programs>
- Teens
  - <https://www.fieldmuseum.org/our-events/teens-and-pre-teens>

- Adults
  - <https://www.fieldmuseum.org/our-events?audience=11>
- Family and community
  - All ages exhibits
    - <https://www.fieldmuseum.org/our-events/kids-families>
  - Community science projects
    - <https://www.fieldmuseum.org/our-events/community-science>
  - Conservation initiatives
    - <https://www.fieldmuseum.org/science/conservation>
- Educators
  - Downloadable lesson plans
    - <https://www.artic.edu/learn-with-us/educators/visit-with-my-students/summer-tours>
  - Professional development
    - <https://www.fieldmuseum.org/educators/teacher-professional-development>

## 5. Illinois Holocaust Museum and Education Center

- Virtual
  - <https://www.ilholocaustmuseum.org/students-educators/virtual-education-resources/>
- Grades K-12
  - Field trip opportunities
    - <https://www.ilholocaustmuseum.org/students-educators/professional-development/confronting-hate-toolkits/>
  - Student Leadership Days
    - <https://www.ilholocaustmuseum.org/students-educators/student-leadership-days/>
- College students
  - Leadership summit
    - <https://www.ilholocaustmuseum.org/students-educators/student-leadership-days/college-leadership-summit/>
- Family and community
  - Guest speaker booking
    - <https://www.ilholocaustmuseum.org/learn/book-a-speaker-school-groups/>
  - Upstanding Activity Club
    - <http://www.ilholocaustmuseum.org/upstander-activity-club/>
- Educators
  - Downloadable resources
    - <https://www.ilholocaustmuseum.org/learn/resources/genocide-resources/>
  - Teaching Trunks

- <https://www.ilholocaustmuseum.org/students-educators/teaching-trunks/>
- Professional development
  - <https://www.ilholocaustmuseum.org/students-educators/professional-development/>
- Confronting Hate Toolkit
  - <https://www.ilholocaustmuseum.org/students-educators/professional-development/confronting-hate-toolkits/>

## **ART**

### **1. Art Institute of Chicago**

- Grades K-12
  - Field trip opportunities
    - <https://www.artic.edu/learn-with-us/educators/visit-with-my-students>
  - Summer programs
    - <https://www.artic.edu/learn-with-us/educators/visit-with-my-students/summer-tours>
- Teens
  - <https://www.artic.edu/learn-with-us/teens>
- College students
  - <https://www.artic.edu/learn-with-us/college-and-university-faculty-and-students>
- Adults
  - <https://www.artic.edu/learn-with-us/adults>
- Family and community
  - <https://www.artic.edu/learn-with-us/families>
- Educators
  - Downloadable lesson plans
    - <https://www.artic.edu/learn-with-us/educators/tools-for-my-teaching>
  - Professional development
    - <https://www.artic.edu/learn-with-us/educators/learn-with-my-peers>
  - Free educator tickets
    - <https://www.artic.edu/learn-with-us/educators/visit-on-my-own>

### **2. Museum of Contemporary Art**

- Grades K-12
  - Field trip opportunities
    - <https://mcachicago.org/learn/schools/tour-booking>
- Teens
  - Teen Creative Agency



- <https://mcachicago.org/learn/youth/tca>
- Family and community
  - All ages exhibits
    - <https://mcachicago.org/learn/families>
  - Youth-led events
    - <https://mcachicago.org/Learn/Youth>
  - School Partnerships for Art and Civic Engagement (SPACE) program
    - <https://mcachicago.org/learn/schools/space>
- Educators
  - Downloadable resources
    - <https://mcachicago.org/publications/learning-resources>
  - Professional development
    - <https://mcachicago.org/learn/teachers/teacher-institute>
  - Teacher Advisory Committee
    - <https://mcachicago.org/learn/teachers>
  - Learning partnerships
    - [https://forms.office.com/pages/responsepage.aspx?id=IQd9ymAKVE6\\_fuQboqQ2-Fd34yl1xDlJo-SnutkMi3lUMoc2R1k3U1U1SoU1QjROOVZMNTThFUFYySi4u](https://forms.office.com/pages/responsepage.aspx?id=IQd9ymAKVE6_fuQboqQ2-Fd34yl1xDlJo-SnutkMi3lUMoc2R1k3U1U1SoU1QjROOVZMNTThFUFYySi4u)

### **3. National Museum of Mexican Art**

- Grades K-12
  - Field trip opportunities
    - <https://nationalmuseumofmexicanart.org/tours>
- Teens
  - <https://nationalmuseumofmexicanart.org/teens>
- Educators
  - Downloadable lesson plans and resources
    - <https://nationalmuseumofmexicanart.org/schools>

## **LITERATURE**

### **1. American Writers Museum**

- Virtual
  - Book club reading recommendations
    - <https://americanwritersmuseum.org/book-club-reading-recommendations/>
  - AWM Podcasts
    - <https://americanwritersmuseum.org/blog/awm-podcast/>
  - All ages exhibits
    - <https://americanwritersmuseum.org/virtual-hub/>
- Grades K-12
  - Field trip opportunities
    - <https://americanwritersmuseum.org/education/>

- Educators
  - Downloadable resources
    - <https://americanwritersmuseum.org/education/>
  - Writing curriculum guide
    - <https://americanwritersmuseum.org/education/write-in-curriculum/>

## References

- Allard, M., Boucher, S., & Forest, L. (1994). The Museum and the School. *McGill Journal of Education*, 29(2), 197–212.  
<https://mje.mcgill.ca/article/download/8169/6097/25429>
- American Alliance of Museums. (2017, December 19). *Museums and P-12 Education*. Retrieved from  
<https://www.aam-us.org/programs/advocacy/issue-elementary-and-secondary-education/>
- Aslin, H.J. & Brown, V.A. (2004). Towards Whole of Community Engagement: A PRACTICAL TOOLKIT. Murray-Darling Basin Commission.  
[https://openresearch-repository.anu.edu.au/bitstream/1885/77450/2/1831\\_towards\\_whole\\_of\\_community\\_engagement\\_toolkit.pdf](https://openresearch-repository.anu.edu.au/bitstream/1885/77450/2/1831_towards_whole_of_community_engagement_toolkit.pdf)
- Baron, C. (2012). Understanding historical thinking at historic sites. *Journal of Educational Psychology*, 104(3), 833–847.  
<https://doi.org/10.1037/a0027476>
- Bedford, L. (2010). Finding the story in history. In D.L. McRaney & J. Russick (Eds.), *Connecting kids to history with museum exhibitions* (pp. 97-116). Walnut Creek, CA: Left Coast Press
- Callanan, M., Cervantes, C., & Loomis, M. (2011). Informal learning. *Wiley Interdisciplinary Reviews: Cognitive Science*, 2(6), 646–655.  
<https://doi.org/10.1002/wcs.143>
- Chaliakopoulos, A. (2020, October 13). History of museums: A look at the Learning Institutions Through Time. TheCollector. Retrieved from  
<https://www.thecollector.com/history-of-museums/>
- Crowley, K. and Jacobs, M. (2011). Building islands of expertise in everyday family activity. In G. Leinhardt, K. Crowley & K. Knutson (Eds.). *Learning conversations in museums*. Mahwah, New Jersey: Erlbaum Associates.
- Crowley, K., Pierroux, P. & Knutson, K. (2014). Informal learning in museums. In R.K. Sawyer (Ed), *The Cambridge handbook of learning sciences*, (2<sup>nd</sup> ed., pp. 461-471). Cambridge University Press.  
[TLS 2nd Edition Ch. 23 Informal learning and museums1 \(2\).pdf](#)
- DeSilver, D. (2017, February 15). *U.S. students' academic achievement still lags that of their peers in many other countries*. Pew Research Center. Retrieved from  
<https://www.pewresearch.org/fact-tank/2017/02/15/u-s-students-internationally-math-science/>

- Education Reimagined. (2020). *A transformational vision for education in the US*. [PDF]. Education Reimagined. <https://education-reimagined.org/wp-content/uploads/2021/01/A-Transformational-Vision-for-Education-in-the-US.pdf>
- Friesen, S., & Scott, D. (2013). Inquiry-based learning literature review. Retrieved from <https://galileo.org/focus-on-inquiry-lit-review.pdf>
- Gardner, D.P. (1983). *A Nation at Risk: The Imperative for Educational Reform: A Report to the Nation and the Secretary of Education, United States Department of Education*. United States: The Commission.
- Graham, J. (2008). *Close encounters with culture: Museums and galleries as part of the early years foundation stage*. Manchester, England: Renaissance North West, pp. 1-21.
- Günay, B. (2012). Museum concept from past to present and importance of Museums as centers of art education. *Procedia - Social and Behavioral Sciences*, 55, 1250–1258. <https://doi.org/10.1016/j.sbspro.2012.09.622>
- Hancock, K. J., & Zubrick, S. R. (2015). Children and young people at risk of disengagement from school: literature review. Commissioner for Children and Young People. [https://www.researchgate.net/profile/Kirsten-Hancock-2/publication/281257513\\_Children\\_and\\_young\\_people\\_at\\_risk\\_of\\_disengagement\\_from\\_school\\_literature\\_review/links/55dd3b4108ae83e420ee62bc/Children-and-young-people-at-risk-of-disengagement-from-school-literature-review.pdf](https://www.researchgate.net/profile/Kirsten-Hancock-2/publication/281257513_Children_and_young_people_at_risk_of_disengagement_from_school_literature_review/links/55dd3b4108ae83e420ee62bc/Children-and-young-people-at-risk-of-disengagement-from-school-literature-review.pdf)
- Hein, G. E. (2006). Museum education. *A Companion to Museum Studies*, 340–352. <https://doi.org/10.1002/9780470996836.ch20>
- Hein, G. E. (2006). Progressive education and museum education. *Journal of Museum Education*, 31(3), 161-174. <http://www.george-hein.com/downloads/progressiveEdHeinJME.pdf>
- Hein, G.E. (2012, April 16). *The Social Responsibility of Museums in a Democracy* [PowerPoint Slides]. Lesley University. [https://slks.dk/fileadmin/user\\_upload/kulturarv/museer/George\\_Hein.pdf](https://slks.dk/fileadmin/user_upload/kulturarv/museer/George_Hein.pdf)
- Hein, G. E. (2013). Progressive Museum Education: Examples from the 1960s. *International Journal of Progressive Education*, 9(2), 61–76. <https://dergipark.org.tr/en/download/article-file/258521>
- Herrington, A., & Herrington, J. (2007). What is an authentic learning environment? *Authentic Learning Environments in Higher Education*, 68–77. <https://ro.uow.edu.au/cgi/viewcontent.cgi?article=2212&context=edupapers>

- Herrington, J., & Oliver, R. (2000). An instructional design framework for authentic learning environments. *Educational Technology Research and Development*, 48(3), 23-48.  
[https://www-jstor-org.ezproxy.depaul.edu/stable/pdf/30220266.pdf?refreqid=excelsior%3A7c3d3fb0053a7ca9f9a92b125cbdf4e2&ab\\_segments=&origin=&acceptTC=1](https://www-jstor-org.ezproxy.depaul.edu/stable/pdf/30220266.pdf?refreqid=excelsior%3A7c3d3fb0053a7ca9f9a92b125cbdf4e2&ab_segments=&origin=&acceptTC=1)
- Hooper-Greenhill, E. (Ed.). (1994). The educational role of the museum (2nd ed., pp. 58-75). Routledge.
- Hubard, O. (2011). Rethinking critical thinking and its role in art museum education. *The Journal of Aesthetic Education*, 45(3), 15-21. University of Illinois Press.  
<https://www.jstor.org/stable/10.5406/jaesteduc.45.3.0015>
- Kallery, M. (2011). Astronomical concepts and events awareness for young children. *International Journal of Science Education*, 33(3), 341-369.
- Koohang, A., Riley, L., Smith, T.J., & Schreurs, J. (2009). E-learning and constructivism: From theory to application. *Interdisciplinary Journal of e-Skills and Lifelong Learning*, 5, 91-109.  
<https://doi.org/10.28945/66>
- LaBelle, T. J., & Ward, C. R. (1994). *Multiculturalism and education: Diversity and its impact on schools and Society*. State Univ. of New York Press.
- Lackoi, K., Patsou, M., & Chatterjee, H. et al. (2016). *A Preliminary Report from the National Alliance for Museums, Health and Wellbeing*. Museums for Health and Wellbeing.  
<https://www.artshealthresources.org.uk/docs/museums-for-health-and-wellbeing-a-preliminary-report-national-alliance-for-museums-health-and-wellbeing/>
- Li, G., (2012). Culturally Contested Pedagogy: Battles of literacy and schooling between mainstream teachers and Asian immigrant parents. Suny Press.
- Mai, L. & Gibson, R. (2011). The rights of the putti: A review of the literature on children as cultural citizens in art museums. *Museum Management & Curatorship*, 26(4), 355-371.
- Mayer, S. J. (2008). Dewey's dynamic integration of Vygotsky and Piaget. *Education and Culture*, 24(2), 6-24.  
<https://doi.org/10.1353/eac.0.0026>
- Michael, J. (2006). Where's the evidence that active learning works? *Advances in Physiology Education*, 30(4), 159-167.  
<https://doi.org/10.1152/advan.00053.2006>
- Munley, M. (2012). Early Learning in Museums A Review of Literature. Paper prepared for Smithsonian Institution's Early Learning Collaborative Network.

<https://www.si.edu/Content/SEEC/docs/mem%20literature%20review%20early%20learning%20in%20museums%20final%204%2012%202012.pdf>

- Munro, E. (2013). “People just need to feel important, like someone is listening”: Recognising museums’ community engagement programmes as spaces of care. *Geoforum*, 48, 54–62.  
<https://doi.org/10.1016/j.geoforum.2013.04.008>
- Munro, E. (2015). Doing emotion work in museums: reconceptualising the role of community engagement practitioners. *Museum and Society*, 12(1), 44-60.  
<https://journals.le.ac.uk/ojs1/index.php/mas/article/view/246>
- International Council of Museums. (2022, August 24). *Museum definition*. Retrieved from  
<https://icom.museum/en/resources/standards-guidelines/museum-definition/>
- National Association of Museum Schools. (n.d.). *About NAMS*. National Association of Museum Schools. Accessed August 14, 2022:  
<https://www.museumsschools.org/history/>
- National Museum Directors’ Council. (2022). *Values and Vision: The Contribution of Culture*. Retrieved from  
[https://www.nationalmuseums.org.uk/resources/press\\_releases/values\\_and\\_vision/](https://www.nationalmuseums.org.uk/resources/press_releases/values_and_vision/)
- Othman, M. K., Petrie, H., & Power, C. (2011). Engaging visitors in museums with technology: Scales for the measurement of visitor and multimedia guide experience. *Human-Computer Interaction – INTERACT 2011*, 92–99.  
[https://doi.org/10.1007/978-3-642-23768-3\\_8](https://doi.org/10.1007/978-3-642-23768-3_8)
- Pedaste, M., et al. (2015). Phases of inquiry-based learning: Definitions and the inquiry cycle. *Educational Research Review*, 14, 47–61.  
<https://doi.org/10.1016/j.edurev.2015.02.003>
- Rand, J. (2010). Write and design with the family in mind. In D.L. McRainey & J. Russick (Eds.), *Connecting kids to history with museum exhibitions* (pp. 257-284). Walnut Creek, CA: Left Coast Press.
- Ravitch, D. (2010). *The death and life of the great American school system: how testing and choice are undermining education*. Basic Books.
- Ruhalahti, S. (2019). Redesigning a Pedagogical Model for Scaffolding Dialogical, Digital and Deep Learning in Vocational Teacher Education. [Doctoral Dissertation, University of Lapland].  
[https://www.researchgate.net/profile/Sanna-Ruhalahti/publication/332188526\\_Redesigning\\_a\\_Pedagogical\\_Model\\_for\\_Scaffolding\\_Dialogical\\_Digital\\_and\\_Deep\\_Learning\\_in\\_Vocational\\_Teacher\\_Educati](https://www.researchgate.net/profile/Sanna-Ruhalahti/publication/332188526_Redesigning_a_Pedagogical_Model_for_Scaffolding_Dialogical_Digital_and_Deep_Learning_in_Vocational_Teacher_Educati)

[on/links/5ca5bf58a6fdcc12ee9141e5/Redesigning-a-Pedagogical-Model-for-Scaffolding-Dialogical-Digital-and-Deep-Learning-in-Vocational-Teacher-Education.pdf](https://doi.org/10.1080/10598650.2021.2021490)

- Rule, A.C. (2006). Editorial: The Components of Authentic Learning. *Journal of Authentic Learning*, 3(1), 1-10.  
[https://dspace.sunyconnect.suny.edu/bitstream/handle/1951/35263/editorial\\_rule.pdf](https://dspace.sunyconnect.suny.edu/bitstream/handle/1951/35263/editorial_rule.pdf)
- Stevens, K.B., Tracy, M., Baker, M., Wolters, B. (2020). *Still left behind: how America's schools keep failing our children*. American Enterprise Institute.  
<https://www.aei.org/wp-content/uploads/2020/09/Still-Left-Behind-Final1.pdf?x91208>
- University of Miami. (n.d.). *Object-Based Learning*. Retrieved from  
<https://academictechnologies.it.miami.edu/explore-technologies/technology-summaries/object-based-learning/index.html>
- Wallen, L. & Docherty-Hughes, J. R. (2022) Caring Spaces: Individual and Social Wellbeing in Museum Community Engagement Experiences, *Journal of Museum Education*, 47(1), 93-102, DOI: 10.1080/10598650.2021.2021490
- Wang, S., Mak, H. W., & Fancourt, D. (2020). Arts, mental distress, Mental Health Functioning & Life Satisfaction: Fixed-effects analyses of a nationally-Representative Panel Study. *BMC Public Health*, 20(1).  
<https://doi.org/10.1186/s12889-019-8109-y>
- Yilmaz, K. (2007). Historical Empathy and Its Implications for Classroom Practices in Schools. *The History Teacher*, 40(3), 331–337.  
<http://www.jstor.org/stable/30036827>
- Zeller, T. (1989). The historical and philosophical foundations of art museum education in America. In N. Berry and S. Mayer (eds), *Museum Education: History, Theory, and Practice*, pp. 10–89. Reston: The National Art Education Association.