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THE MUSEUM AS A CLASSROOM: EFFECTIVE UTILIZATION OF EXHIBITS AS A CLASSROOM TOOL

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THE MUSEUM AS A CLASSROOM: EFFECTIVE UTILIZATION OF EXHIBITS AS A
CLASSROOM TOOL

by

Kristi L. Lueker

B.A., University of Illinois, 2009

A Research Paper
Submitted in Partial Fulfillment of the Requirements for the
Master of Public Administration.

Department of Political Science
in the Graduate School
Southern Illinois University Carbondale
April 2012

MPA Research Paper APPROVAL

THE MUSEUM AS A CLASSROOM: EFFECTIVE UTILIZATION OF EXHIBITS AS A
CLASSROOM TOOL

By

Kristi L. Lueker

A Research Paper Submitted in Partial

Fulfillment of the Requirements

for the Degree of

Master of Public Administration

in the field of Museum Administration

Approved by:

Lorilee Huffman, Chair

Robert DeHoet

Dr. John Hamman

Graduate School
Southern Illinois University Carbondale
April 2012

AN ABSTRACT OF THE RESEARCH PAPER OF

Kristi L. Lueker, for the Master of Public Administration degree in Museum Administration, presented on April 2012, at Southern Illinois University Carbondale.

TITLE: THE MUSEUM AS A CLASSROOM: EFFECTIVE UTILIZATION OF EXHIBITS AS AN EDUCATIONAL TOOL

MAJOR PROFESSOR: Lorilee Huffman

One purpose of most museums is to serve as an educational tool to its audiences. Museums often work alongside formal educational institutions to introduce material, supplement lessons, or provide information to audiences of all ages. Because schools often use museums as a source for its students to learn in an environment outside of the formal classroom setting, it is important for both school teachers and the museums receiving the students how to best work together for the most beneficial experience to the students' education. Through closely viewing 4th and 6th grade students from the Murphysboro school districts of Murphysboro, Illinois, one is able to study the educational benefit of these students while participating in a study at the General John A. Logan Museum of Murphysboro, Illinois.

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Chapter 1

Introduction

Throughout modern history, museums have struggled with a question of identity, unsure of whether visitors embrace the museum as a place for knowledge fulfillment or entertainment endeavors. In reality, most museums serve both purposes with the main reason for attending although it is dependent on the individual visitor (Falk, Dierking, and Foutz, 2007). Since the global economic crisis began in 2008, both public and non-profit entities alike have been forced to economize and to cooperate with one another across disciplines to serve their constituents in the most effective manner possible. Especially for both museums and schools, this not only is an applicable statement, but it is also a method that brings the two to work more closely together in programming and services.

With competition for public and private grants and other sources of funding for various types of cultural agencies and educational institutions rising, these entities are faced with the difficult dilemma of deciding how to delegate their dwindling funds. Museums face the need to maintain staff, to pay for exhibitions as well as to preserve and enhance its collection. On the other hand, schools are often in desperate need of updated textbooks and technology to ensure that student education is both accurate and current with the ever-changing world of technology.

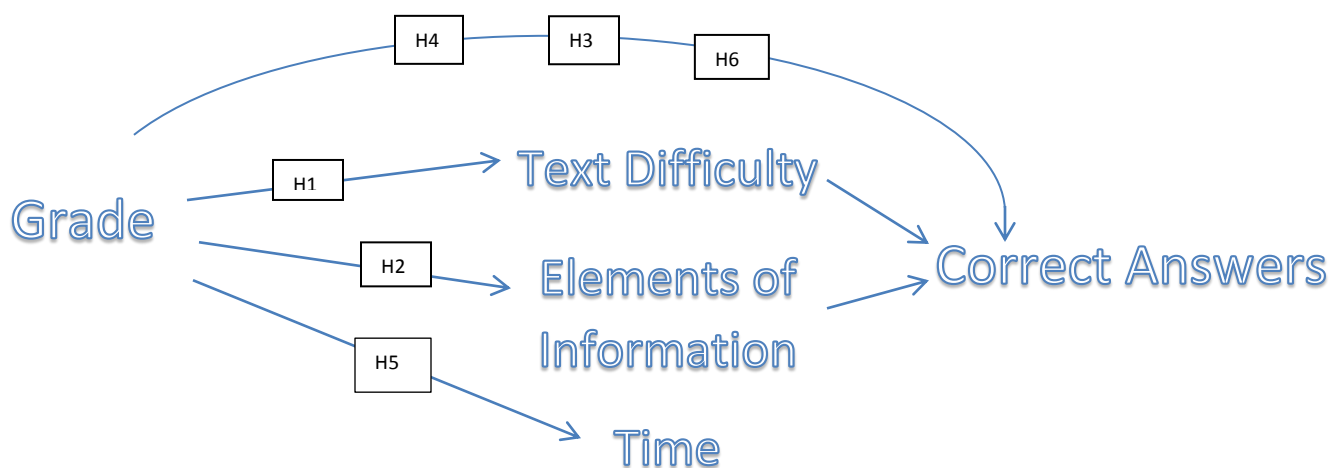
Grants for both public and nonprofit organizations are becoming more competitive. With monetary funds such as grants holding a potentially conflicting competition between the varying educational elements for students, consider the following question which impacts education within both the museum and formal educational systems alike. What element within the museum holds the most educational value for students?

Within this research paper, I examine the literature on the topic of education for students in the learning museum setting and results from a study conducted in May 2011 at the General

John A. Logan Museum (GJALM), Murphysboro, Illinois to view which element of the history museum that middle school students from three different schools in Murphysboro, find to be the most educationally beneficial. Students ranged in ages from 9 to 12 between 4th and 6th grades from the General John A. Logan Middle School, Carruthers Middle School, and Murphysboro Middle School. While 5th grade students were initially included in the study itself, I only received data back from one class and thus did not gain enough information to make a conclusive indication on how 5th grade students would compare to the 4th or 6th grade students. Thus, my study focuses on the variation between the 4th and 6th grade students.

Hypothesis model:

Figure 1.



The following hypotheses will be used to test the model:

- H1. Students in higher grade levels of 6th grade will be able to answer questions from more complex/longer labels than students in lower grade 4th grade classes.
- H2. Students in all grade levels will be more likely to correctly answer questions where answers are found in pictures or objects than in text labels.

- H3. Students in 6th grade will be more likely to correctly recall answers to questions later on than students in lower grade levels.
- H4. Students in lower grade levels will be more likely to answer with "Do Not Know" or not answer the question at all than students in higher grade levels.
- H5. Students of all grade levels will be able to correctly answer more questions the day of their visit to the museum than they will be able to one week later as determined through a posttest evaluation.
- H6. Students from higher grade levels will be more likely to correctly answer questions in the pre-test than students from lower grade levels.

Chapter 2

Literature Review

The review of the literature regarding museums and education is discussed via each hypotheses used to test the model of learning by middle school students, who were part of the study. Overall, the review of the literature suggests that children who visit museums for educational purposes with their school learn the most from information that they can both receive in the quickest manner and relate to the most. This would imply that objects, pictures, and short texts with minimal reading would be the most applicable source of learning for children in an exhibit. Another important finding in the literature suggests that all visitors, especially children, gain the most educational value out of their museum experience when it is used as supplemental knowledge to what they already know or have already been learning from their formal education and when the students can be physically engaged with the exhibit and museum itself.

H1. Students in higher grade levels of the 6th grade will be able to answer questions from more complex/longer labels than students in lower grade levels of the 4th grade.

As will be more thoroughly discussed in the literature for Hypothesis 3, students with a prior knowledge about the information that they are viewing in an exhibit are more likely to make meaningful connections from that experience and in turn be able to engage in more thorough discussion and interaction with that topic (McRaine, D. Lynn & Russick, John, 2010). This concept applies more narrowly to the specific elements within the exhibit as well. When students are familiar with a concept and come across a course of information that connects the student with that concept, they are more likely to

spend the time reading more and lengthier labels than would the students who are not familiar with a previously studied concept. According to P. Michael Jones, director of the General John A. Logan and retired middle school teacher, students typically are introduced to the history of the American Civil War in the 5th grade (Jones, 2012). Thus these students of the 5th and 6th grade levels will be expected to spend more time on lengthier and more complex labels as they are more familiar with the topic of the Civil War than are 4th grade students.

H2. Students in all grade levels will be more likely to correctly answer questions where answers are found in pictures or objects than in text labels.

Although it is an older article, “Museum Education and School Art: Different Ends and Different Means” (Zeller, 1985) discusses a key component of learning in a museum. Zeller explains that the museum is an entirely unique environment to children and should not be treated as though it is a familiar classroom. What makes a museum different than the typical educational setting is that it encompasses objects and in fact, it is its objects that are at the core of the museum educational curriculum (Zeller, 1985). The objects bring the lesson to life; making art real to the students and making history relevant through objects, as applicable to this research paper.

More specifically, objects can make the visit to a museum more meaningful. Denise L. Stone of the University of Kansas explains that children have their own collections of objects. While these collections may be baseball cards, computer games, dolls, etc., it has a physical context which inspires imagination. Objects within the museum have a similar affect bringing the lessons of the museum to a personal level for the students (Stone, 2008).

H3. Students in higher grade levels will be more likely to correctly recall answers to questions later on than students in lower grade levels.

Many of the literature sources reviewed emphasized the role of prior knowledge in learning. This is especially critical when dealing with a history museum such as the General John A. Logan Museum (GJALM, Murphysboro, Illinois) in which the paper's study was focused. Because students do not often begin learning about American history in great detail until the 5th grade (Jones, 2012), these 5th and 6th grade middle school students with previous formal education on the American Civil War who visit the General John A. Logan Museum will have a greater learning experience while at the museum as they will be more familiar with the topic prior to their visit.

John H. Falk and Lynn D. Dierking explain that “new learning is always constructed from a base of prior knowledge” (Falk, John H. & Dierking, Lynn D., 2000). By students having this prior knowledge of the Civil War and familiarity with the subjects presented in GJALM exhibits, content of the exhibits are meaningful and become not only a refresher of prior knowledge but also a point of discussion. Meaningful discussions of objects in which students are familiar create memories from which the students can more easily recall later in life (Burchenal, Margaret & Grohe, Michaelle, 2007).

This issue becomes particularly relevant when we discuss the topic of educational programs and the use of worksheets by the museum within the museum educational setting. When students are not engaged in the exhibit through an experience in which they can draw upon an emotional connection, they run the risk of fulfilling requirements without absorbing information or skills that could have otherwise

been developed throughout that museum experience. "Worksheets tend to narrow the focus of the viewing to only finding the answers in order to complete their assignment rather than using their own curiosity to explore the exhibit" (Falk, John H., Dierking, Lynn D., & Foutz, Susan, 2007). This observation also demonstrates that students who are not fully engaged in the exhibit and are simply presenting flat answers are not encouraged to draw conclusions or make connections to concepts.

H4. Students in lower grade levels will be more likely to answer with "Do Not Know" or not answer the question at all than students in higher grade levels.

As stated in the literature discussion for the previous hypotheses, the students familiar with the American Civil War prior to their visit to the General John A. Logan Museum will draw more meaningful connections to the topics in the museum than would students in lower grades of the 4th grade level who have more than likely spent limited time on the subject in the formal classroom prior to their visit, if any at all. Since students of 4th grade are less likely to have encountered the themes presented at the GJALM than would the 6th grade students, they would be more likely to fall in to the trap of regurgitating information for the sake of completing an assignment" (Falk, John H., Dierking, Lynn D., & Foutz, Susan, 2007). This is particularly crucial when we discuss the time in which children will spend at a particular exhibit. Students who are engaged in an exhibit may be willing to spend 5-10 minutes in a particular gallery. However, students who do not connect with the subject are able to quickly bypass the exhibit, overlooking much crucial information that they may be in search for (Hein, George E., 1998). Since these students are likely to be striving to complete the assignment, they will hurry through the gallery, collecting as many answers as they can, spending less time on the questions that they find the most difficult once they accept the option of "Do

Not Know” as a potential choice. There is also the possibility that these students simply do not have the inquiry skills developed to the extent of those skilled compared to 6th grade students and thus have more questions left unanswered when the time expires at the end of the exercise.

H5. Students of all grade levels will be able to correctly answer more questions the day of their visit to the museum than they will be able to one week later.

This hypothesis is based on the fact that the information presented to the students is fresh in their minds at the time of the actual data survey worksheet which was administered during their visit to the General John A. Logan Museum. If students could not make a meaningful connection out of the information they discovered in the museum, then they are less likely to retain that information for a one week period (Stone, Denise L., 2008).

H6. Students from higher grade levels will be more likely to correctly answer questions in the pre-test than students from lower grade levels.

Once again, this hypothesis is derived from the basis that 6th grade students will more likely have had the information presented in the pre-test prior to their visit to the museum than will have the 4th grade students. While some 4th grade students may serve as outliers, constituting those who possibly visit Civil War reenactments or history museums with their families, the majority will be new to the information presented in the General John A. Logan Museum.

Chapter 3

Methods

The research study surveyed 288 students from grades 4th to 6th from three different middle schools in the Murphysboro, Illinois school district. These middle schools included the General John A. Logan Middle School, Carruthers Middle School, and Murphysboro Middle School. Students came to the General John A. Logan Museum, also located in Murphysboro, to participate in the study as part of the museum's annual "Civil War Days" festival that ran from May 11-13, 2011. Upon arrival to the museum, students took a pre-test to analyze their level of knowledge of the subject of the Civil War prior to their participation in the museum. The pre-test contained five questions of demographic information and ten test questions related to the American Civil War in which students were given 5 minutes to complete. Students were then given 20 minutes to conduct a "scavenger hunt" where they searched the museum for answers to the same 10 test questions regarding the American Civil War, all answers of which could be located within the museum. Students were instructed to work alone and each gallery of the small museum had an adult attendant to monitor that students were not working together on the test questions while inside the museum .

Exactly one week after the students' visit, teachers gave the students a test with the same questions as the scavenger hunt survey in order to determine how much of the information that the students retained. All three tests that the students were given contained the same 10 test questions.

Each of the three tests that students were given included five demographic questions followed by ten test questions. The demographic questions recorded the student's school, age, grade, gender and race. The test questions included in the survey that the students were given varied by museum educational elements such as objects, text labels, and visual images as well as complexity of information which was determined by length of the text panels on which they were questioned. Text panels refer to the information that corresponds directly to an object or image and also to the blocks of information that may provide detailed information on a given topic within the museum galleries. Each test was recorded anonymously with each student being assigned a random number that ranged from 001-300 as an identifier for their three tests. Tests cannot be directly correlated to the specific student who took the test but it can be identified to which class and school group the test was a part of.

Chapter 4

Variables

Dependent Variable

Correct vs. Incorrect Answers

The dependent variable is the set of answers from the "Civil War Days" test. These answers were either correct or incorrect based upon the questions that the students were given. The first question was worded as follows: "During what years did the Civil War take place?" The choices from which to respond were a. 1760-1765, b. 1800-1815, c. 1861-1865, d. 1914-1918, e. I do not know. When coding the responses, the choices were recoded into a new variable which changed the response of the choice categories into a. Correct, b. Incorrect, c. I do not know, and d. Did not answer the question. The remaining nine questions were recoded in the same manner with their question wording and choices as follows:

(2) "What was one nickname that John A. Logan was known as?"

a. The Slick Shooter, b. Hogan Logan, c. Dirty Work Logan, d. Smooth Move Johnny, e. I do not know.

(3) "What is the highest rank received by John A. Logan?"

a. Sergeant, b. Captain, c. Colonel, d. General, e. I do not know.

(4) "What was the cause of death for John A. Logan?"

a. Battle Wound, b. Cancer, c. Old Age/ Nature Causes, d. Rheumatism, e. I do not know.

(5) "Who issued the Emancipation Proclamation?"

a. John A. Logan, b. Abraham Lincoln, c. Colonel Mustard, d. General Patreaus, e. I do not know.

(6) " Which Presidential nominee did Logan campaign for in the 1864 election?"

a. Ronald Reagan, b. Abraham Lincoln c. Andrew Jackson, d. Himself, e. I do not know.

(7) "What important action did the Emancipation Proclamation accomplish?"

a. Freed Slaves. b. Gave women the right to vote, c. It made Abraham Lincoln President of the United States, d. It freed the United States from British rule, e. I do not know.

(8) "On what day was President Lincoln assassinated?"

a. September 11,2001, b. August 14, 1914, c. June 14, 1776, d. April 15, 1865, e. I do not know.

(9) "How long did John A. Logan serve as a Representative in Congress (House of Representatives)?"

a. 2 years, b. 15 years, c. 31 years, d. 46 years, e. I do not know.

(10) "Who succeeded Abraham Lincoln as President of the United States following his death?"

a. Andrew Johnson, b. John A. Logan, c. John F. Kennedy, d. General Ford, e. I do not know.

Independent Variables

Grade

In order to identify which grade each student was in at the time of the survey, each student was asked to select which grade they were in from a choice of third

through 8th grade in the demographic section of the test. Students were asked "What grade are you currently in?" and given the options of a. 3rd grade, b. 4th grade, c. 5th grade, and d. 6th grade.

While I only ended up testing 4th and 6th grade students for the purpose of my student, I was originally under the impression that students may be included from grades as advanced as 8th grade which is why this was included as an option in the test. The same rationale goes for the 3rd grade option. While this left potential room for error on the part of students for selecting the incorrect grade, students did very well in only selecting grades 4, 5 or 6. Only one class selected 5th grade which were eventually not included in the data.

Intervening Variables

Text Difficulty

Exhibit text difficulty was measured by test questions that involved text of some sort of varying degrees of complexity. While all students received the same test, there were eight test questions within the test survey in which the answers to them could be located in the text of labels found in the museum. Each of the text difficulty questions were labeled on a range of 1-3 where "1" is the simpler questions that include a simple phrase or a smaller text label, and "3" is the most complex and involve more than three or more paragraphs of reading to determine the answer within a text label. A category "2" text difficulty question comes from questions where answers can be found in the reading of one to two paragraphs. For example, the following is a category 1 text

difficulty question, Question (1) "During what years did the Civil War take place?" a. 1760-1765, b. 1800-1815, c. 1861-1865, d. 1914-1918, e. I do not know; was the title to a gallery where the label "The Civil War 1861-1865" hung over the entrance to the exhibit. Another category 1 text difficulty question is Question (9) "How long did John A. Logan serve as a Representative in Congress (House of Representatives)?" a. 2 years, b. 15 years, c. 31 years, d. 46 years, e. I do not know, is a level 3 text difficulty rating. (10) "Who succeeded Abraham Lincoln as President of the United States following his death?" a. Andrew Johnson, b. John A. Logan, c. John F. Kennedy, d. General Ford, e. I do not know.

Category 2 text difficulty is seen in Question (7) "What important action did the Emancipation Proclamation accomplish?" a. Freed Slaves. b. Gave women the right to vote, c. It made Abraham Lincoln President of the United States, d. It freed the United States from British rule, e. I do not know . In addition, Question (6) " Which Presidential nominee did Logan campaign for in the 1864 election?" a. Ronald Reagan, b. Abraham Lincoln c. Andrew Jackson, d. Himself, e. I do not know is also a category 2 text difficulty. Category 2 text difficulty is also addressed in Question (8) "On what day was President Lincoln assassinated?" a. September 11, 2001, b. August 14, 1914, c. June 14, 1776, d. April 15, 1865, e. I do not know.

A category 3 text difficulty question is found in Question (4) "What was the cause of death for John A. Logan?" a. Battle Wound, b. Cancer, c. Old Age/Natural Causes, d. Rheumatism, e. I do not know. was rated of a difficulty level 3. Question (5) "Who issued the Emancipation Proclamation?" a. John A. Logan, b. Abraham Lincoln, c.

Colonel Mustard, d. General Patreaus, e. I do not know. This was labeled as a category 2 difficulty.

Elements of Information

Information was broken-up into three different categories of elements based upon how the answers to test questions were located: text, objects, and images (including photographs or any visual image). The text label questions have already been described in the "Text Difficulty" variable section. An example of image elements can be seen in Question (2) "What was one nickname that John A. Logan was known as?" a. The Slick Shooter, b. Hogan Logan, c. Dirty Work Logan, d. Smooth Move Johnny, e. I do not know where the image was a life-size cartoon cutout of John A. Logan with his name and nickname written across it. A small label follows to explain that he was commonly known as "Dirty Work Logan" and why.

A collection of medals belonging to John A. Logan presents an object question as tested in Question (3) "What is the highest rank received by John A. Logan?" a. Sergeant, b. Captain, c. Colonel, d. General, e. I do not know. The object display shows his progression of rank in chronological order and is followed up with a short panel describing the objects.

Time

One week after the student visited GJALM, teachers were given a third worksheet to give to the students as a post-test with the same questions that they experienced in the museum in the previous week. Students answered the questions on the test to the best of their ability based on the information that they could recall from

their visit to the museum. Teachers administered the posttest to students instead of the researcher as it was realized early in the study that many of the teachers were concerned about the test taking up too much additional time in their classroom. To keep this variable as consistent as possible, each teacher assured me that they would administer the test exactly one week after the students visited the museum with students being given an allotted time of 5 minutes to answer the questions of the posttest. Students were monitored by the teachers so that they would answer the posttest questions on an individual basis.

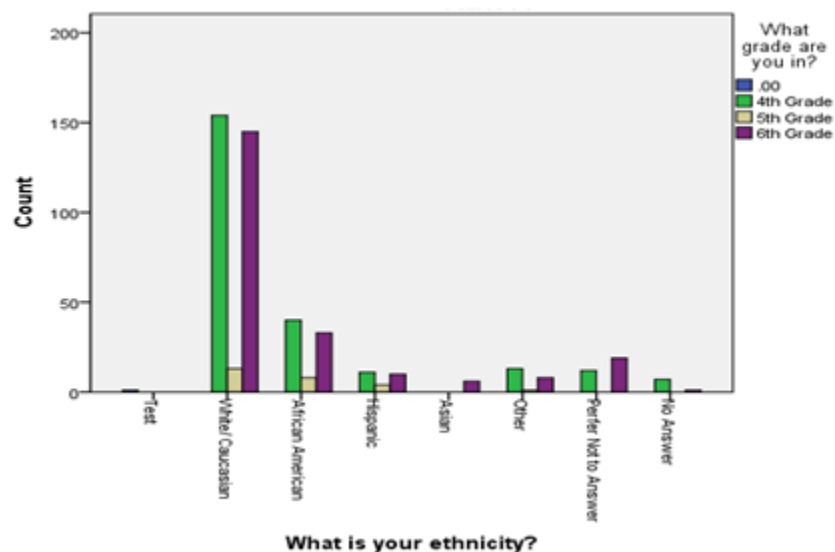
Chapter 5

Findings

For the purposes of comparing the data from the test surveys, the SPSS statistical software program was used. Chi-square was selected as a method to test the observed data (the test survey) against what we would expect the results to be as suggested by the literature.

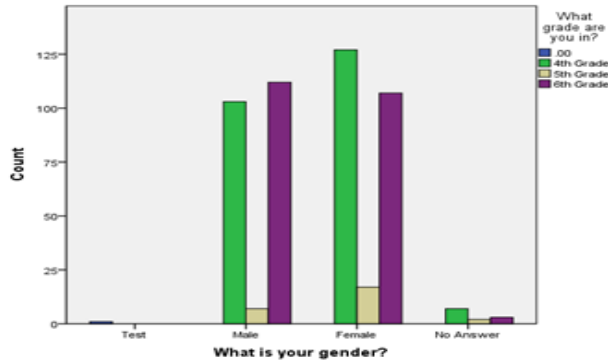
Demographic information of ethnicity, age, and gender was collected for informational purposes only and were not directly related to the goal of the study. Ethnicity information from the study reports 64.2% of students responded as considering themselves to be of White/ Caucasian descent compared to 16.7% African American, 5.1% Hispanic, 1.2% Asian, 4.5% Other, and 6.4% selected that they would prefer not to answer.

Table 1



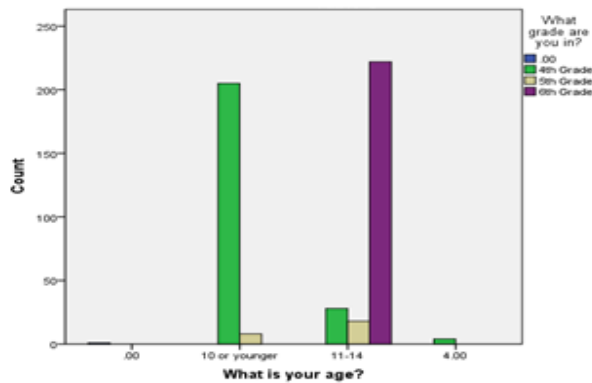
The information of gender reports 45.7% of students selecting their gender as being male, 51.6% as female, and 2.5% did not answer or selected that they prefer not to answer.

Table 2



Test takers for the study are primarily under the age of 14. Respondents who selected "Age 10 or younger" made up 43.8% of the participants. Over half of the students, 55.1%, reported being between the ages of 11 and 14 while .8% selected "15 and older".

Table 3



Hypothesis 1 (H1)

H1. Students in higher grade levels of 6th grade will be able to answer questions from more complex/longer labels than students in lower 4th grade classes.

Table 4

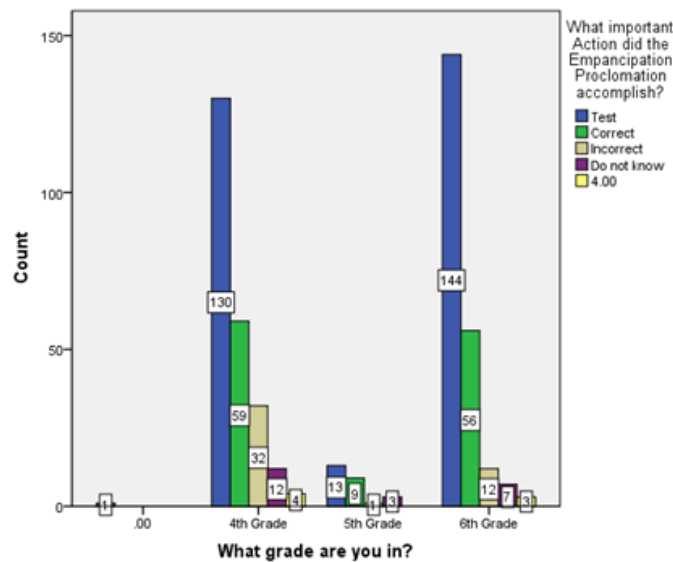


Table 1. Chi-square= .012

Table 1 displays the true number of students who answered the question (as signified by the blue bar in the graph) “What important action did the Emancipation Proclamation accomplish?” This data is drawn from the survey worksheet the day of the visit to the museum. The low number of 5th grade respondents is reflected in having only one 5th grade class participate in the study.

While H1 and the literature suggest that the higher grade level of 6th grade should be more likely to correctly answer the level 3 complex question, 45.8% of 4th grade students correctly answered the question compared to the 38.9% of 6th grade

students who correctly answered it. However, the Pearson's Chi-Square analysis tells us that it is not a statistically significant comparison. Thus, while we see the 4th grade students correctly answering more questions in this scenario, we cannot reasonably expect the same result in if a similar study was to take place.

Hypothesis 2 (H2)

H2. Students in all grade levels will be more likely to correctly answer questions where answers are found in pictures or objects than in text labels.

Table 5

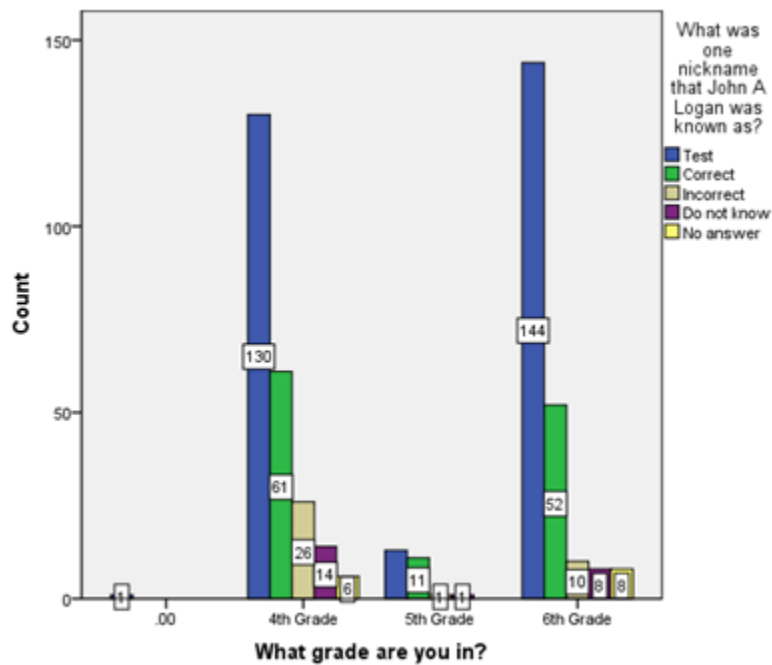


Table 2. Chi-square= .072

Similarly to the findings in Hypothesis 1, Table 2 shows that 46.9% of the 4th grade students correctly answered the question “What was one nickname that John A. Logan was known as?” These answers were compared to those in Table 1 which had a 4th grade correct answer percentage of 45.8%. H2 states that students in lower grade levels will be more likely to correctly answer questions where answers are found in pictures or objects than those that are found in text labels. Findings for this question are too closely comparable in numbers to prove this hypothesis to be true. However, it similarly cannot be disproved either. A variable that might have affected the results, is that these 4th grade students could potentially have been taught some amount of American Civil War history prior to their visit to the museum which would make them comparable students in regards to prior knowledge to those of the 6th grade thus affecting the expected scores of the 4th grade students .

Hypothesis 3 (H3)

H3. Students in 6th grade will be more likely to correctly recall answers to questions later on than students in lower grade levels.

With a P value of .000 in Chi-square analysis, it can be said with a reasonable amount of confidence that students in higher grades levels are more likely to correctly recall answers to the same questions they experienced in the museum one week post-visit. Table 3 shows a difference of 27.6% correctly answered questions between the 4th grade and the 6th grade with the 6th grades students being those who answered the most correctly.

The literature and research findings both agree that the 6th grade students should be the ones who theoretically answer more questions correctly one week later. If this can be attributed to students' prior knowledge of the Civil War, then one may want to continue this study of making meaningful experiences out of museums through prior knowledge and expanding upon the imagination of the students. However, one cannot rule out the general cognitive development advantage that the older 6th grade students would have over younger 4th grade students, thus allowing them to form more memories in a shorter time frame.

Table 6

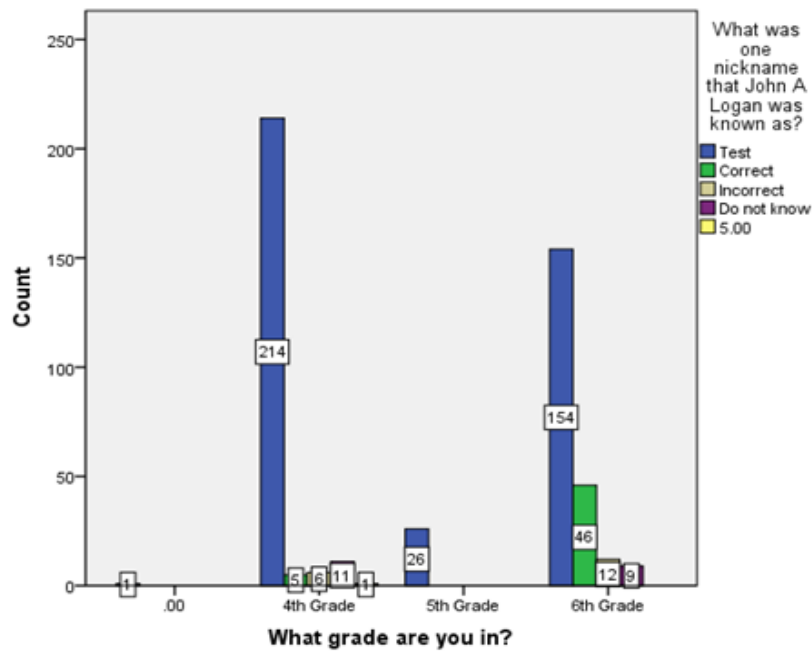


Table 3. Chi-square= .000

Hypothesis 4 (H4)

H4. Students in lower grade levels will be more likely to answer with "Do Not Know" or not answer the question at all than students in higher grade levels.

Hypothesis 4 states that students in lower grades levels will be more likely to answer with the response of "Do Not Know" or not answer the question at all than will the students in higher grade levels. For the purposes of demonstration in H4, data was presented from both the worksheet given the day of the visit (Table 4a) and data from one week after the exhibit (Table 4b). Both sets of data demonstrate that with reasonable certainty, H4 does in fact prove to be true. Table 4a shows 13.1% percent of 4th grade students answering the question of "What is the highest rank received by John A. Logan?" with either "Do Not Know" or not answering the question at all.

Table 7a

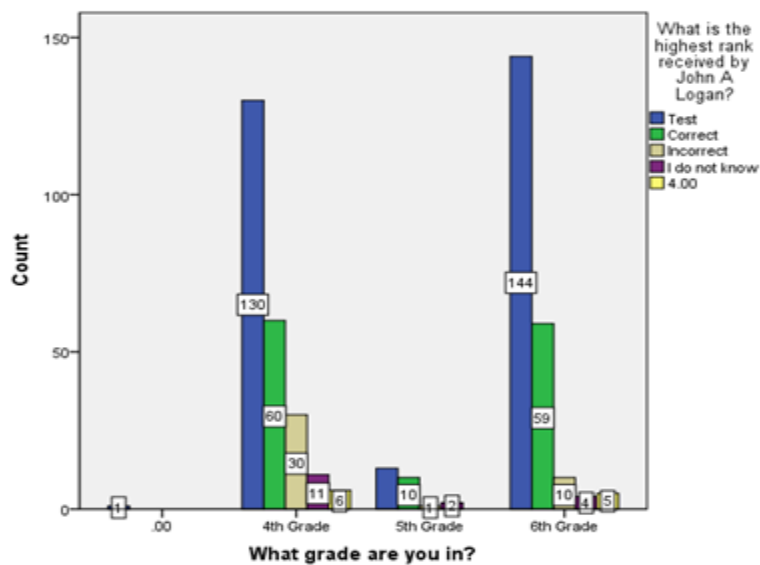


Table 4a. Chi-square= .007

With the data in Table 4b, students are asked the exact same question one week later. While the number of 4th grade students who answered with either “Do Not Know” or no response at all decreased to 5.6, we still have a statistical significance of Chi square .000 allowing with reasonable certainty to accept H4 in both occurrences.

Table 7b

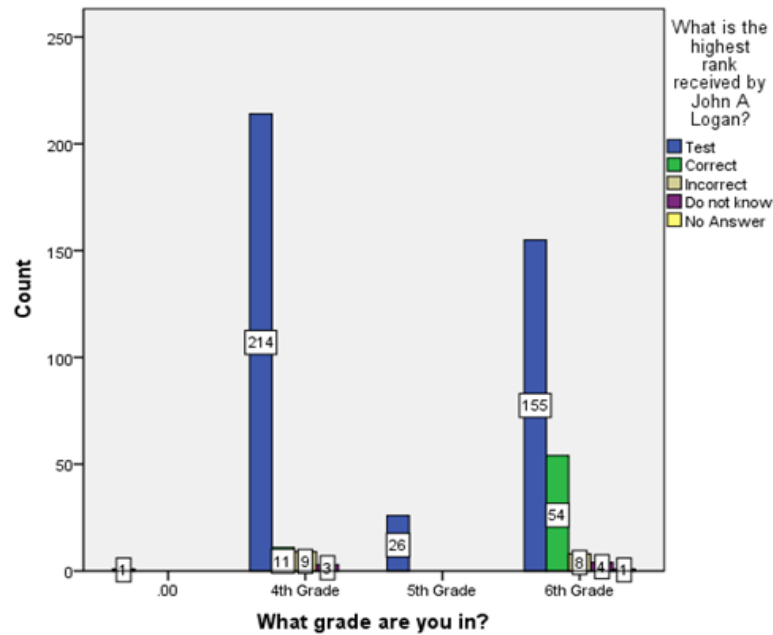


Table 4b. Chi-square= .000

Hypothesis 5 (H5)

H5. Students of all grade levels will be able to correctly answer more questions the day of their visit to the museum than they will be able to one week later as determined through a posttest evaluation.

With a reasonable amount of certainty, we can assume that students of all grade levels will be able to correctly answer more questions the day of their visit to the museum than they will be able to one week later as stated in hypothesis 5.

Table 8a

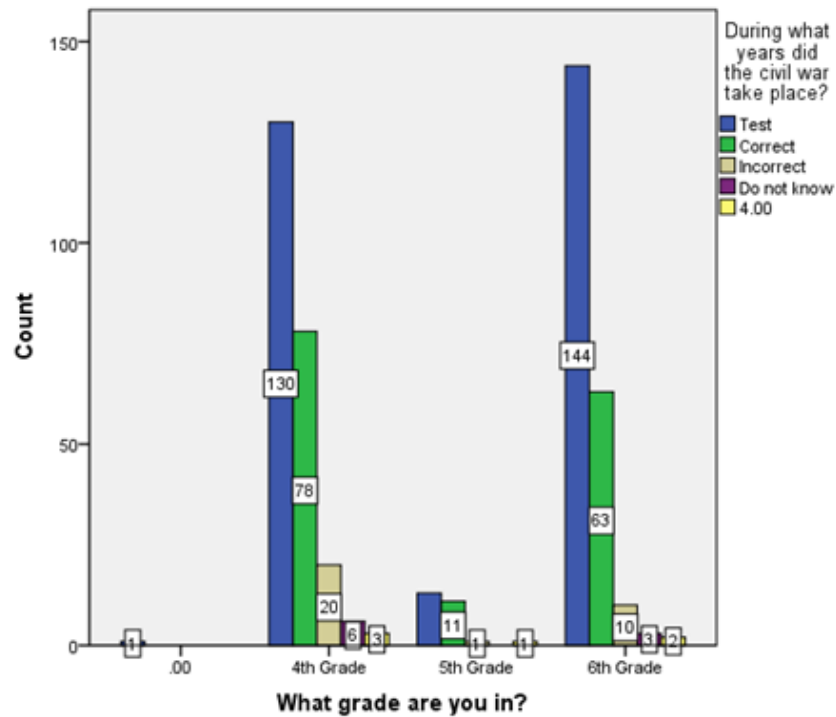


Table 5a. Chi-square= .027

Table 5a shows 60% of 4th grade students and 44% of 6th grade students correctly answering the question "During what years did the civil war take place?" on the day of their visit to the museum. In contrast, only 3.7% of 4th graders and 30.3 % of 6th graders correctly answered the same question when asked one week later. Again, the 6th grade students are retaining more of the information than the 4th grade students with Tables 5a and 5b demonstrating H5 to be correct based upon the data presented.

Table 8b

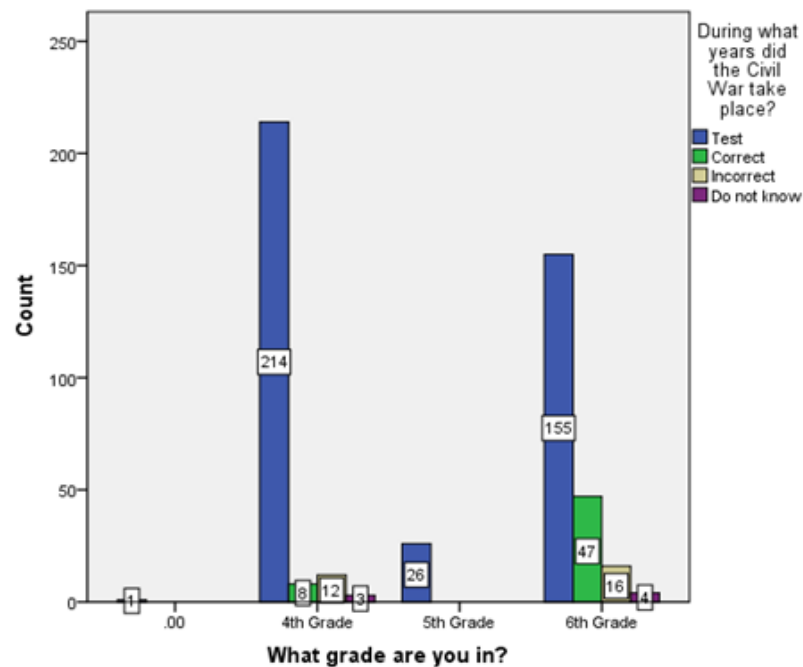


Table 5b. Chi-square= .000

Hypothesis 6 (H6)

H6. Students from higher grade levels will be more likely to correctly answer questions in the pre-test than students from lower grade levels.

Somewhat surprisingly, the data for Table 6 shows 18.4% of 4th grade students correctly answering the question “During what years did the Civil War take place” in the pre-test compared to the 11.7% of 6th grade students who answered the question correctly. The data in Table 6 corresponds to H6 which states students from higher grade levels will be more likely to correctly answer questions in the pre-test than students from lower grade levels. However, the data is not statistically significant thus we could not reasonably expect the same results if the study was conducted again

under similar circumstances. H6 is rejected as a hypothesis that can be proven as a true statement through the study at GJALM.

Table 9

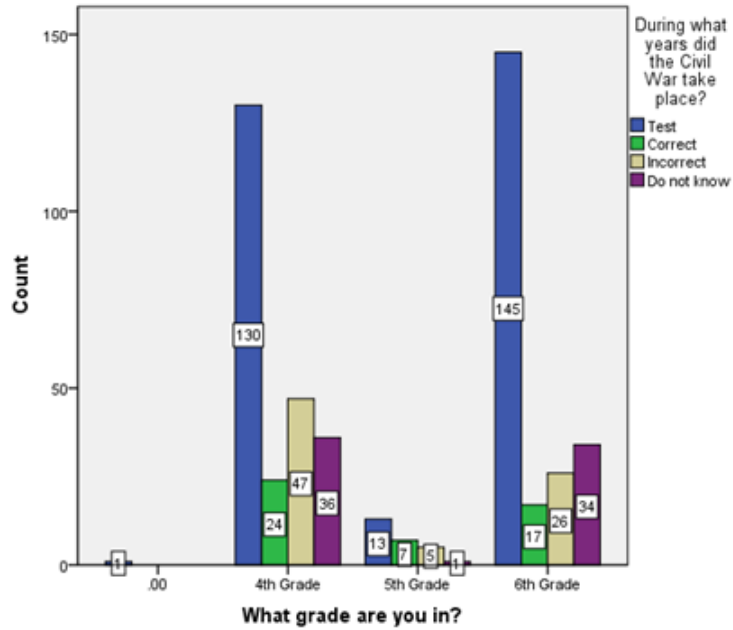


Table 6. Chi-square= .112

Chapter 6

Conclusion

While the research findings present some unexpected results compared to what the literature suggests, particularly in Table 1 (H1), Table 2 (H2), and Table 6 (H6), the study still demonstrates useful information that can be used by the the General John A. Logan Museum when they consider middle school education in its exhibits. Prior knowledge is the key to a comprehensive and meaningful experience within the museum as suggested by Denise L. Stone (2007). And, while this prior knowledge is beneficial to say the least; there are always ways to improve upon that notion alone. Falk, Dierking, and Foutz stress the importance of the worksheets used in the museums as well as the exhibits themselves (2007). Worksheets should be designed to guide the students through the museum rather than restrict what it is that they study. Students should be allowed to use their curiosity to explore so that they may make connections based upon their individual prior knowledge and imagination (Falk, Dierking, and Foutz 2007).

In utilizing Visual Thinking Strategies as suggested by Margaret Burshenal & Michelle Grohe, some questions can prompt students to make observations and help them work through the difficulties that they may have in explaining why they like something that they see at the museum (Burchenal, Margaret & Grohe, Michelle, 2007). A few of these examples provided that could be used in the history museum are:

1. What's going on in the picture?
2. What do you see that makes you say that?

3. What more can we find?

We need not feel as though we are restricted to these questions alone. The idea behind encouraging student engagement in discussion is to provoke thought. Open ended questions, particularly when the student is able to choose what object or subject he or she discusses, helps make the connection between meaning and object thus creating a more lasting memory and educational experience.

During this time of economic struggle, it is all too easily for organizations of all types become consumed by the struggle of seeking out more money and as a result, find themselves in a conflict of interests against competing organization, particularly for government funded grants and private sources. Schools strive to push their curriculum forth and improve test scores, while museums want their mission to reflect in their collections and displays. No matter how tough the financial burden of both institutions may become, we must never forget that our first priority when dealing with education is the student (Zeller, 1985). If we overlook those who benefit most from the services that are provided by the schools and museums, we are then making ourselves obsolete and diminishing the educational value that one may otherwise receive in the process.

A suggestion for further study on the topic of education in a museum for middle school students would be to include a larger pool of 5th grade students so that a progression of change in information may be analyzed between grade levels where prior knowledge from the formal educational setting is relevant. If possible, further study could include how much time each individual class in the formal classroom setting spent on the topic at hand prior to the visit to the museum and compare those classes. This

information would be particularly useful to teachers in the middle schools when planning such events similar to the museum visit so that formal lessons could be coordinated with these trips. This type of planning would help students gain the most educational benefit from the visit to the museum that they could.

Another suggestion for further study would be to focus on the specific communication between museums and their visiting school classrooms. It would be beneficial to study the specific effects of communication between the museum and classroom where teachers used the museum galleries to supplement what they were already teaching within the classroom in contrast to those who use the museum as a field trip, separate from the studies conducted within the formalized classroom.

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