Evaluating the Galleries of The Department of Coins and Medals at the British Museum

An Interactive Qualifying Project submitted to the faculty of

Worcester Polytechnic Institute

In partial fulfillment of the requirements for the Degree of Bachelor of Science

By

Donald Gaxho

William Skene

Nadia Skorinko

Kimberly White

May 1, 2009

Report Submitted to:

Paul Davis and Dominic Golding

Worcester Polytechnic Institute

Katherine Eagleton

The Department of Coins and Medals of the British Museum

Abstract

Two galleries in the British Museum's Department of Coins and Medals were evaluated to determine their impact on visitors. Tracking studies and questionnaire surveys conducted in Gallery 68 and Gallery 69a revealed that improvements can be made. Gallery 69a would benefit from increased advertising, and the content of cases in Gallery 68 should be updated and displayed in a new fashion. We also created a formula to calibrate a people counter for more accurate visitor estimates, and modified the educational program evaluation protocols to increase feedback from students and teachers.

Authorship

This report represents the combined efforts of all British Museum team members. Each member contributed equally to the project in data collection, analysis and writing.

Acknowledgments

Our team would like to thank our sponsor Dr. Katherine Eagleton for all of her support and assistance with the project, both at The British Museum and during the previous term. We would like to thank curators Megan Gooch and Vesta Curtis for their feedback as we evaluated Galleries 68 and 69a, as well as Jennifer Adams for her information and ideas regarding the evaluation of the Coins and Medals Department's educational sessions. In addition, our team would like to thank David Francis and Kat Leung for taking time to inform and update us on the museum's current gallery evaluation methods.

We would like to give a special thanks to David Ferguson for answering our many questions on the British Museum and the British culture.

Also, we would like to thank our advisors Professors Dominic Golding and Paul Davis for their comments and guidance both in Worcester and London.

Executive Summary

The Department of Coins and Medals in the British Museum is home to thousands of objects from around the world. The Department of Coins and Medals maintains two galleries which display part of its collection. Gallery 68, the "HSBC Money" gallery is a large permanent gallery dedicated to money and explanations of its history and production. Gallery 69a is a temporary gallery that housed a special exhibition, "The Splendor of Isfahan: Coins from Iran" at the time of this project. Like all museums, the British Museum periodically conducts exhibit evaluations to improve the content and design of existing and future exhibits, but the Department of Coins and Medals had not conducted evaluations of its galleries in some time. Consequently, the project team conducted visitor tracking observations and exit surveys in Gallery 68 and Gallery 69a to determine visitation patterns and flows, and to elicit visitor opinions about the current exhibits.

We found that the average dwell time (i.e., the time a visitor spends in a gallery) for Gallery 68 (184 seconds) was greater than some galleries and less than others (Figure 1). The average dwell time for Gallery 69a (118 seconds) is lower than the median for all galleries (184 seconds), but this gallery is substantially smaller than the others shown in Figure 1.

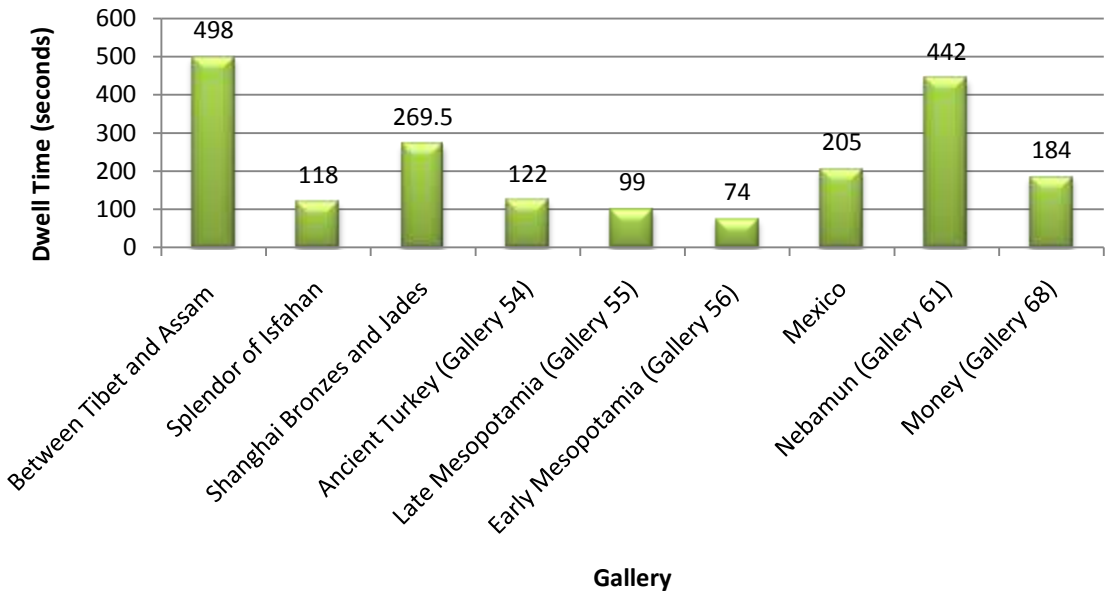


Figure 1: Average Dwell Time of Visitors to Select Galleries

Museums typically distinguish between the attracting and holding power of exhibits. Attracting power is the ability of a case to draw the visitor's attention, and holding power is the ability of a case to keep the visitor engaged for a period of time. Attracting power can be determined by observing the first case that visitors stop at when they enter the gallery and by calculating the percentage of visitors who stop at each case in a gallery. We found that the most popular cases in Gallery 68 were the first cases to the left and right of the door when visitors entered from Door 1 (see Figure 2). These cases may have been most attractive because they contained an attractive balance of text and artifacts.

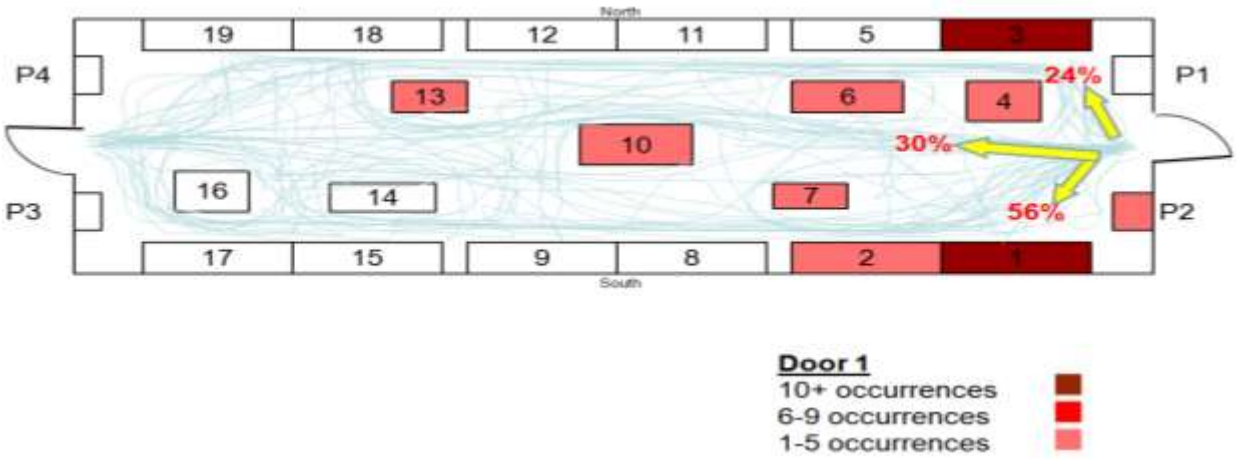


Figure 2: Visitors' First Stops and Paths after Entering from Door 1

Figure 3 shows that visitors who entered Gallery 68 from Door 2 most often stopped at Case 17 first, and the second most popular first stop was Case 13. Case 17 contains modern currency and Case 13 contains a large golden till, both of which were very popular objects according to visitor responses on the questionnaire. It remains unclear, however, to what extent location immediately inside the entryway explains the apparent attractiveness of the case highlighted in Figure 2 and Figure 3.

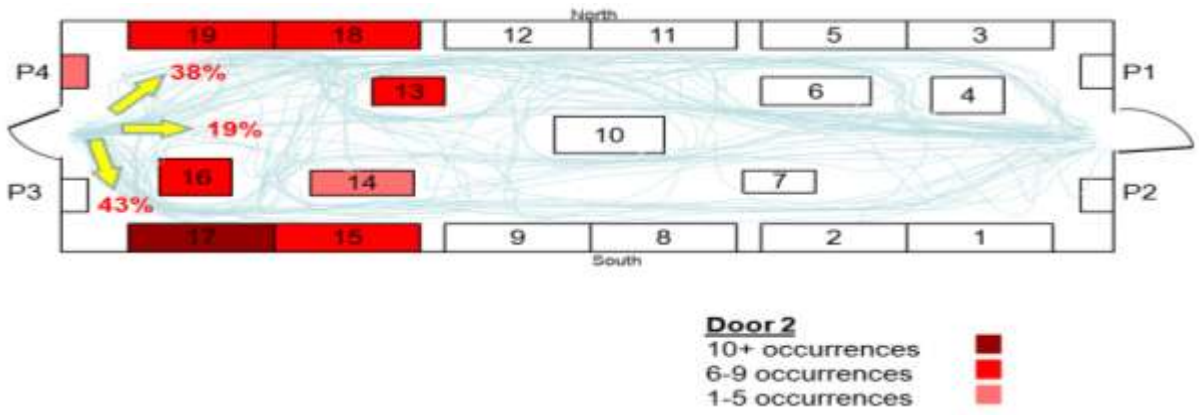


Figure 3: Visitors' First Stops and Paths after Entering from Door 2

Figure 4 shows that Cases 1, 2, 3 and 11were the most attractive cases in Gallery 69a. Cases 1, 2 and 3 were highly attractive because they were the largest in the room and all contained large objects. Case 11 was especially attractive because it was the only case clearly visible from the doorway and it contained large coins, a bright blue vase, and a painted tile. From the exit surveys, we learned that this case drew the attention of many visitors who had not intended to visit the gallery, and also those who did not even know the gallery existed due to the lack of advertising.

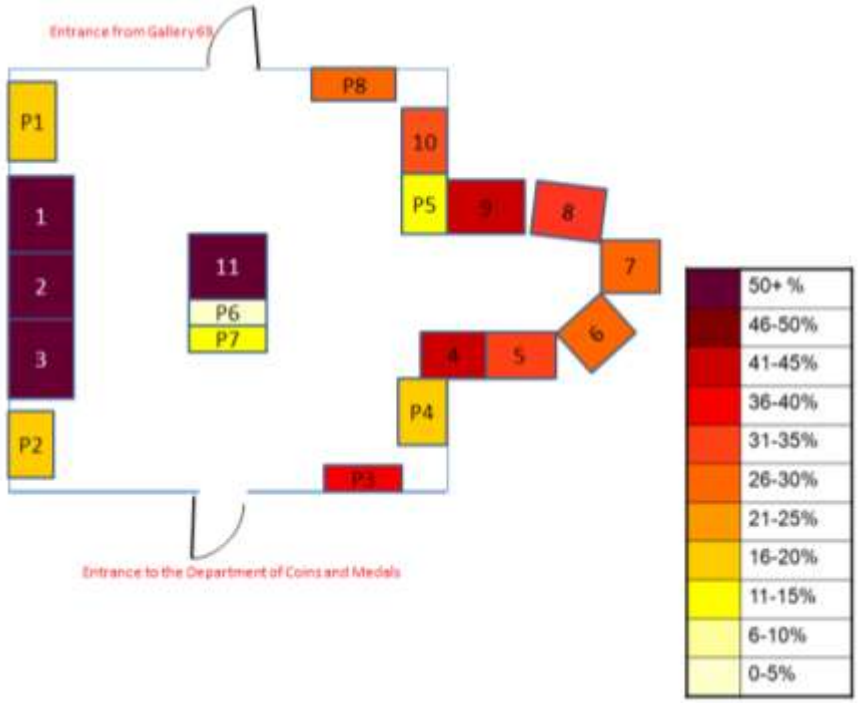


Figure 4: The Percentage of Visitors Who Stopped at Each Case in Gallery 69a

The holding power of the cases was also measured for both galleries based on the length of time visitors spent at each case or panel. Figure 5 shows that Cases 17, 18 and 13 in Gallery 68 had the greatest holding powers. Cases 13 and 17 held objects that visitors enjoyed, and Case 18 contains modern artifacts that visitors recognized easily. Case 10 evidently has limited holding power since most visitors merely glanced at the case and few stayed to read the large amounts of text. Due to this lack of interest, we recommend that Case 10 contain larger or more eye-catching objects and less text.

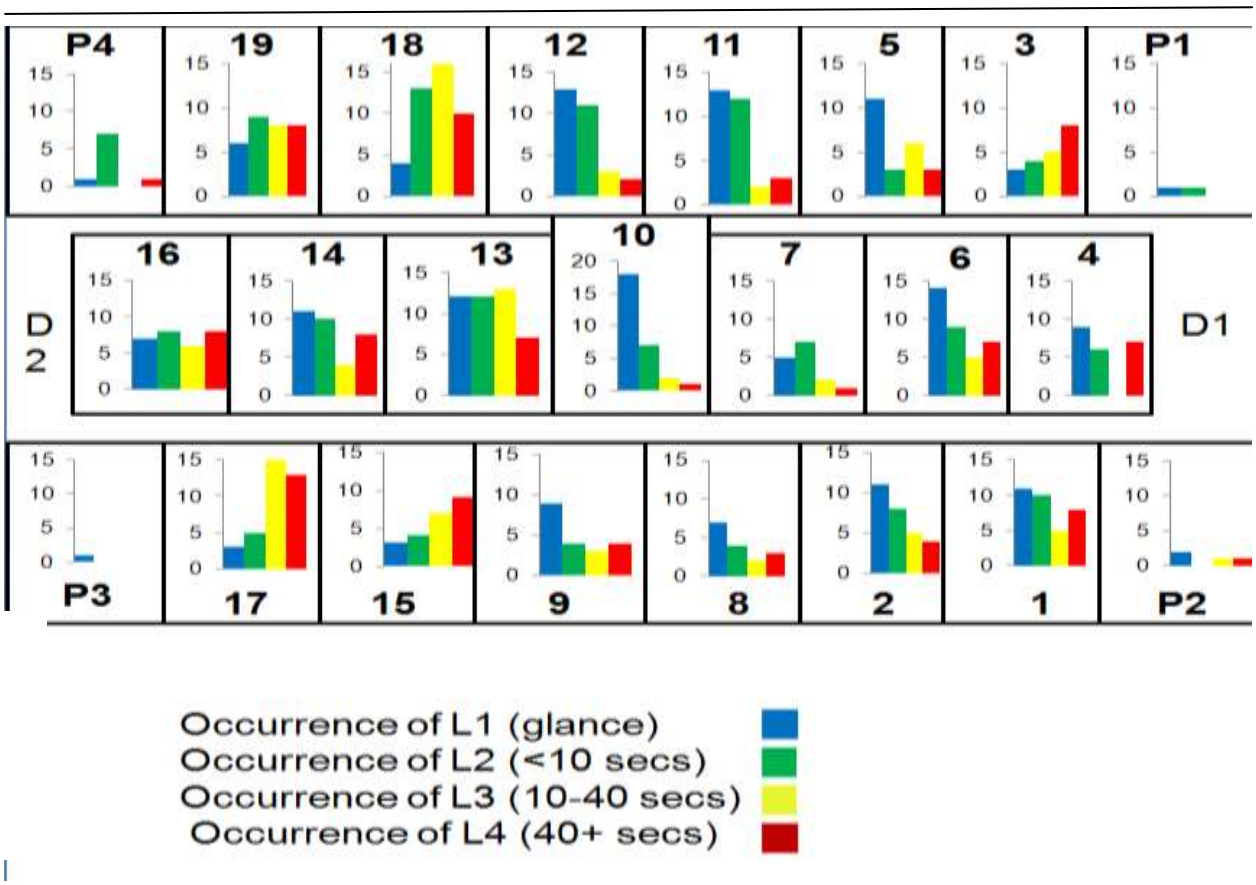


Figure 5: Time Visitors Spent at Cases in Gallery 68

Figure 6 shows the holding power of the cases in Gallery 69a. Evidently, Case 11 both attracted and held visitors' attention. Other exhibits that held visitors' attention were Cases 8 and 9 and Panel 1 (labeled "P1" in Figure 6). Cases 8 and 9 held many modern objects that are immediately recognizable to many visitors, including a miniature rug, stamps and paper currency. Panel 1 presented a brief history of early Isfahan.

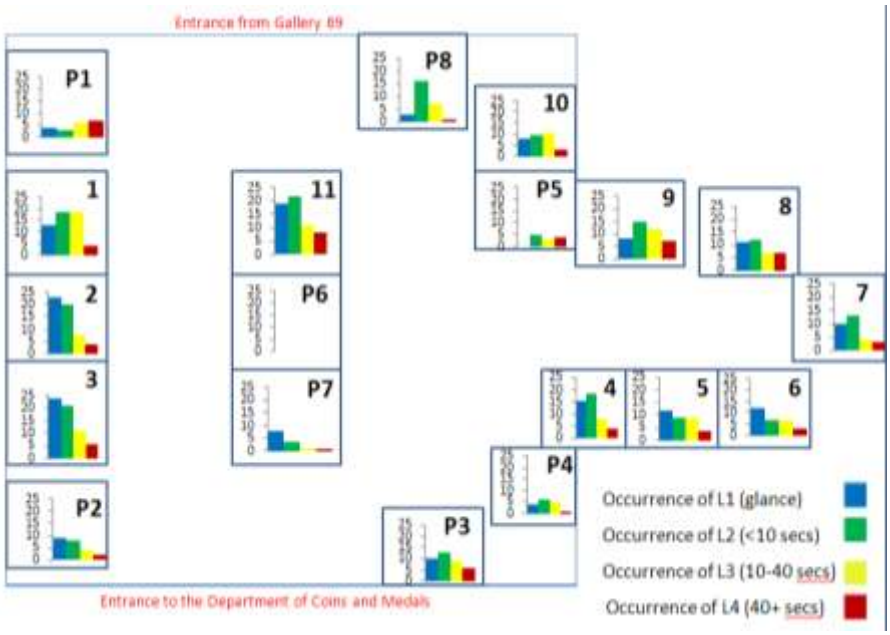


Figure 6: Holding Power of the Cases in Gallery 69a

Using the information gathered from the tracking and observation studies in Gallery 68, we determined the "pinch points" (congested areas) of the gallery are between Cases 16 and 17 on the southern wall and in the space between Cases 3, 4, 5 and 6 (see Figure 7). We recommend that the new TV screens (which the Department of Coins and Medals plans to install) be located in less congested areas between Cases 2 and 8 and between Cases 12 and 18 (see Figure 7).

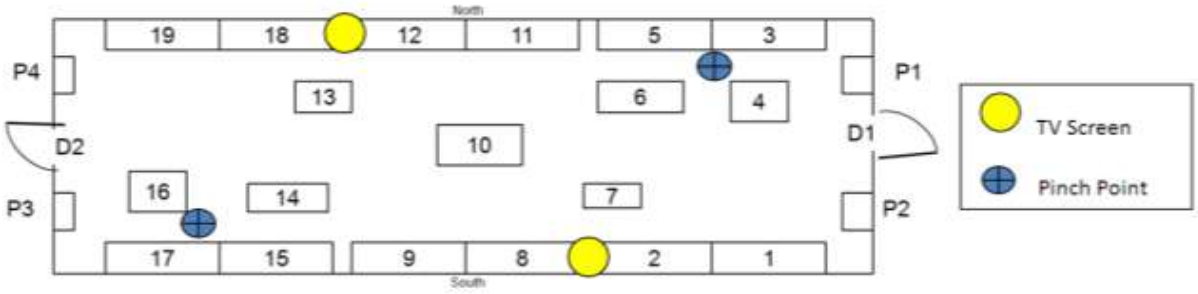


Figure 7: Pinch Points and Suggestions for TV Screen Placement

Using both observations and survey responses, visitors were categorized by viewing strategy (*Browser, Follower, Searchers,* and *Researchers*). *Browsers* – those who "bounce" from case to case with no plan - were the most common in both Gallery 68 and 69a, but *Followers*, *Searchers*, and *Researchers* were more prevalent than in other galleries. This suggests the

content of the gallery may be encouraging a greater depth of involvement or engagement among visitors.

Questionnaire responses were used to determine motivation, which is classified as *social, intellectual, emotional* or *spiritual*. When answering the survey, visitors were asked about their reasons for coming to the museum, and later about the experience they had at the museum. The first question was used to determine their motivation for visiting the museum, and the second question determined their motivation from the experience. The goal of the museum is to "move" guests from social to intellectual visitors or from intellectual to emotional visitors. For Gallery 68 an additional 11% of visitors left the gallery with an emotional motivation. For Gallery 69a an additional 15% of visitors left with an emotional motivation. This data indicates that visitors learned and changed from their experience, which is something the Museum strives very hard to achieve.

Based on our analysis of the data we recommend a number of changes to enhance the visitor experience. For Gallery 68, the most significant improvements would come from Case 10 and the placement of the TV screens. Increasing the size and decreasing the amount of text and increasing the hours that staff work at the handling station should also be taken into consideration. Due to the location and size of Gallery 69a, it would greatly benefit from more advertizing. Important characteristics to emphasize in future exhibitions in this gallery include the use of bright colors and impressive objects in Case 11. For both galleries, the viewing strategy, motivation and all other aspects of the visitor should always be taken into consideration.

The primary goal of any museum is to educate its visitors, and galleries are the principal method to do so. Therefore, regular gallery evaluations must be conducted. The evaluations we conducted assessed the current impact of Gallery 68 and Gallery 69a on visitors by determining many characteristics of their visit. Now that the Department of Coins and Medals possesses an in-depth knowledge of their visitors, they can improve Gallery 68 and plan successful exhibitions in Gallery 69a in the future.

Table of Contents

List of Figures

List of Tables

1. Introduction

From their foundation museums have served as repositories of humanity's accumulated knowledge. Whether they display relics of ancient cultures or demonstrate the laws of physics, each museum acts as an information outlet for the use of anyone curious to learn, and it is this process of informal, learner-centered education that has become the centerpiece of the modern museum. In order to fulfill their role as centers of informal learning, museums provide galleries and educational programs which always evolve to both be consistent with current learning research, and to match the interests of their diverse audiences. To design exhibits and programs which audiences are interested in, and to measure the effectiveness of these programs once they are in place, museums conduct evaluations. While museum evaluation is a well established practice in the United States, it is still relatively new to the United Kingdom (Hooper-Greenhill, 2007). In more recent years, however, the Department of Culture, Media and Sport (DCMS) of the UK government has moved to make evaluation a top priority in an effort to both improve the effectiveness of museums as centers of learning, and to justify their continued funding.

The British Museum is one of the largest museums in the world, with a collection of over 7 million objects and an average of nearly 5 million local and international visitors each year. In following its strategic goal to become "a space not only for the 'learned and curious' but also for the benefit of the general public," the British Museum is a leader in evaluations in the UK (The British Museum, 2008). The museum's Coins and Medals Department (DCM) is one of ten major subdivisions of its total collection, and has about 9,000 coins, medals, and banknotes on display. More than half of these items are found in the Hong Kong and Shanghai Banking Corporation (HSBC) Money Gallery, which chronicles the development of money from its origins in the 7th century BC, to the present day. The department also runs special temporary exhibits in Gallery 69a that continually change to cover a variety of innovative themes. In addition to its exhibits, the department also provides a weekly hands-on object handling educational program which is free for school groups to attend and covers topics ranging from Africa to Ancient Greece.

The overall goal of this project was to assist the DCM in a review and refinement of its educational program and exhibit evaluation protocols. We conducted tracking studies and questionnaire surveys to evaluate both the department's HSBC Money Gallery 68, and the

Splendour of Isfahan temporary exhibit in Gallery 69a. These evaluations found that cases containing a good balance of visually appealing objects and manageable text commentary were most successful at attracting and engaging visitors. We created a formula to calibrate the newly installed people counter in Gallery 69a and updated the protocol for educational program evaluation. We also identified the ideal areas for the placement of television screens based on flow patterns in Gallery 68 and recommended that the exhibits in Gallery 69a be advertised more aggressively to enhance visitation.

Section 2 of this report presents the research which influenced the British Museum's new gallery evaluation system, and our own changes to the DCM's educational program evaluation protocol. The methodology we employed to gather data for each evaluation is presented in Section 3. Section 4 describes how we analyzed this data to lead to the conclusions and recommendations presented in Section 5.

2. Background

Museums have evolved substantially over time. Museums have always been known as places where people could go to ponder worldly phenomena and to learn about the world around them. Museum goers would publicly discuss and learn in a fashion similar to students at a modern university. By the eighteenth century, museums were more widely seen to be a place of valuable collections stored behind panes of glass. The next large evolution in museums came with the advent of electronics. Museums were then able to be increasingly interactive with the guests, enabling a higher level of stimulation for museum guests (Alexander 2007). As museums progress beyond simple galleries of collections, to a more interactive experience, we may find that they become increasingly more important in mainstream learning. By constantly evaluating current exhibits, and enriching our knowledge of how people learn, will we be able to improve the effectiveness of museum exhibits in meeting the needs and interests of their visitors.

In order to fully understand museum exhibits and programs, it is necessary to explore a range of topics relating to museums. The history of museum learning describes how museums have tried to adapt to evolving theories of learning. These mainstream learning models are constantly being evaluated and refined using several different forms of evaluation methods. In the sections that follow, these topics will be discussed in detail to provide a thorough understanding of museum exhibits.

2.2 History of Museum Learning

From their foundation, modern museums have been based on an enlightenment ideal that knowledge should be made accessible to everyone who seeks it. Hein compares the intriguing timing in the emergence of both museums and encyclopedias, stating that "both were an expression of the 18th century spirit of enlightenment which produced an enthusiasm for equality of opportunity of learning. The theory behind these movements was that collections which had hitherto been reserved for the pleasure and instruction of a few people should be made accessible to everybody" (1998, p.3). This idealism of freedom of knowledge branched out from the previous 'cabinets of curiosities' which adorned the estates of the aristocracy. Museums

developed as an effort to organize those haphazard collections into the hierarchical and rational classifications which were advancing the scientific revolution (Hein, 1991).

This approach followed a realist theory of education, with knowledge being seen as something inherent in the universe, which people were meant to strive to understand. As such, museums adopted a didactic teaching style for their audiences, with curators formally imparting knowledge to the museum attendees in a 'transmission-absorption' fashion (Hein, 1998). This approach was passable in a time when many scientific and historical areas of research were still in their infancy, as the strictly formal approach was designed to correct misinterpretations by the museum audience. As knowledge became more consolidated around the late 19th and early 20th century, however, interest increased in putting more emphasis on the learner than the knowledge being learned.

The late 19th century also saw the creation of public schooling, around the same time museums expanded their educational aspects (Hein, 1998). Hein notes the impact on museums in the development of public education, stating that "All the approaches to education still used today…were first introduced by pioneering staff members a century ago: didactic labels of varying length and complexity, lectures and other events for the public, special courses and programs for school groups, deliberately didactic exhibitions, and in-house and outreach programs for general and specific audiences" (1991, p.4).

Yet by the late 19th century, public school programs had developed assessment systems along with evaluation of school and school systems (Hein, 1991). These were the result of demands mandated by governments to show that they were effective in educating the public. Museums, on the other hand, though they were equally public in most countries, did not establish these evaluation approaches, believing that people would learn and be entertained without the need for studies of visitors' experiences.

In Britain, the lack of attention to educational evaluation in museums was compensated for by individuals like Molly Harrison of the Geffrye Museum in London, Barbara Winstanley in Derbyshire, and Rene Marcouse of the Victoria and Albert Museum in London (Hooper-Greenhill, 2007). The first British schools officers were appointed in the early 20th century, to promote education within museums. Their role in developing links between museums and schools led to school services in 15 museums by the 1930s. This increased to 34 by 1964, thanks

in part to the newly established Group for Educational Services in Museums which would later become the Group for Education in Museums. By 1983, 154 museums in the UK employed 362 educational specialists (Hooper-Greenhill, 2007).

In the 1990s reports by the American Association of Museums, National Heritage and the Museums Association in the UK, stressed the importance of developing concrete educational policies for all museums. Some museums developed educational policies through which they initiated student-teacher visits, freely accessible workshops and both credited and non-credited school courses, though many others lagged behind (Hooper-Greenhill, 2007). Unfortunately and perhaps surprisingly, the Anderson report commissioned by the Department for National Heritage concluded in 1997 that "at present the provision of educational services by museums," was "patchy, ranging from the outstanding to the mediocre" (Hooper-Greenhill, 2007, p.6). It found that only 37% of the 566 museums surveyed had some limited provision for museum education, while 49% offered no explicit educational services at all. Only 23% had a museum education policy (Hooper-Greenhill, 2007).

Growing numbers of government mandates which emphasized the role of education in museums would increase these numbers substantially. After the New Cultural Framework of the Department for Culture Media and Sport, educational programs in British museums have grown at a significant pace. In a 2006 report from the Museum, Libraries and Archives Council (MLA), which directly compared growth with that described by the Anderson report, found that 86% of British museums included formal educational programs, and 88% included informal education programs. Sixty-seven percent had developed explicit educational policies, and the total number of education posts had increased to 1,171 from the previous 755 recorded in the 1997 report (Hooper-Greenhill, 2007).

2.3 Learning Theories

As museums strived to determine the most effective methods to present information, much research analyzed the different ways that people assimilate information. There are many theories of learning, but only a few are useful for museums (MLA SouthWest, 2004). Educational reformers like Dewey, Piaget, Vygotsky and others developed theories in response

to the insight that "the process of learning is not a simple addition of items into some sort of mental data bank, but a transformation of schemas in which the learner plays an active role and which involves making sense out of a range of phenomena presented to the mind" (Hein, 1998, p.22).

Generally, each of these models can be organized as in Figure 8, by being placed in a scale which ranges from extreme idealism, to extreme realism. Idealism places the learner at the forefront of learning, making every effort to make sure that each person's ideal way of learning can be accommodated by the teacher. Realism, on the other hand, puts the spotlight on knowledge itself, forcing the learner to make any accommodations necessary to perceive it (Hein, 1991).

Another analogy to these two extremes is the concept of formal vs. informal education. Formal education is most closely represented by the first model introduced here, usually involving a teacher dictating a lesson to a student. This method is often seen as necessary in order to spread knowledge of ideas which are believed to be essential, and this is demonstrated by the fact that nearly all public schooling systems are formal learning environments. While the museums of the past employed this formal approach, most museums are now more informal learning environments, where every attendee makes a free choice, to seek the knowledge museums provide at his or her discretion. This type of environment has lead museums to focus more on attendee engagement and how to accommodate individual learning styles. The various models from didactic to constructivist are discussed in the following sections.

Figure 8: Learning Theories Spectrum

2.3.1 The Didactic Model

This is the oldest and probably most straightforward model of learning. The teacher is valued as having an expert understanding of the knowledge being taught, and the student is

expected to absorb the knowledge as it is dictated to him or her. This process, which Hein calls "transmission-absorption", emphasizes the ability of the teacher to adequately transmit the information to the student in small manageable parts, while the student is expected to absorb each part individually and reconstruct what is being taught by combining the individual parts (1991).

Knowledge itself is the key focus of the model, with much pressure placed on both the teacher and the student to try to change their way of thinking in order to understand it. This fact places this model of learning far to the left of the scale as the most realistic. Due to the fact that all early museums and public schools have used this model in the past, and many still do, this is the most familiar, cheap, and easy way of educating the museum's audience. The disadvantages however, are also significant. The model tends to exclude those who do not respond to linear literary and mathematical modes of thinking. Since it is more a mode of teaching than of learning, it creates a kind of authoritarian attitude to the learning process, where individual learning is not a priority. For these reasons, modern museums have moved away from the didactic approach, and explored the following alternative approaches (MLA Southwest, 2004).

2.3.2 The Behaviorist Model

The behaviorist theory views learning as something which is represented by changes in the behavior of the learner. Teaching on the other hand is viewed as simply the process of shaping that behavior to allow for a demonstration of learning. This theory is based on the idea that the learner is motivated by positive rewards received after demonstrating a behavior that indicates he or she has learned something. This feeling of 'getting it right' is supposed to encourage the learner to continue learning, and reinforce what he or she has already learned (MLA Southwest, 2004).

The problem with this systematic approach however, is that often the learner's interests do not match the goals of the teacher. As Hein states, "a lack of interest can lead to the interface [of an exhibit or program] becoming more stimulating than its content" (2004). Additionally, this mode of learning relies on linear communication between the audience being taught and the teacher measuring their performance. Any interruptions, of which there are plenty in a museum

environment, interfere with learning, and so the process often needs to happen in self contained areas, or 'pods' (MLA Southwest, 2004). Due to the free choice nature of both museum exhibits and programs, this approach is often not feasible, but it is perfect for distance learning, where the 'teacher' can be substituted by a computer program, allowing a pupil to demonstrate knowledge gained from a museum visit while at home.

2.3.4 Discovery Learning

Discovery learning, like the didactic approach, recognizes the existence of knowledge as independent from the learner, as something which the learner must seek to attain. However, this approach also acknowledges the role of the learner as a meaning maker, and places activity as a central method of learning. This idea of learning through doing is very popular with younger audiences, especially enthusiastic children (MLA Southwest, 2004). As Falk and Dierking note "Not only does a physical setting create a context in which learning can occur, but it also has the potential to create a desire to learn…So motivated, learning proceeds effortlessly and intrinsically; there is no need to force, prompt, or bribe" (2000, 196).

This approach may therefore eliminate any need for the positive feedback required by the behaviorist approach, but it relies solely on the will of the learner to participate in actively trying to learn. Even when participation is not an issue, the quality of learning from such exhibits or programs can be suspect. The choices to give a museum attendee free reign without any direction can lead to unusual versions of commonly agreed principles. It is incorrect to make an assumption in discovery learning that all activity can lead to learning of some kind. As Hein states "experiences must be not only 'hands-on' but also 'minds-on'" (1991). Evaluation is necessary to indicate the quality of learning provided by a discovery exhibit (MLA Southwest, 2004).

2.3.5 The Constructivist and Socio-Cultural Model

The constructivist model of learning is almost the complete opposite of the traditional didactic approach. It is based on the concept that learning is the active 'construction of meaning' by the learner (MLA Southwest, 2004). As such, it assumes that learning and knowledge itself is

contextually based on the individual learning it, and therefore requires an acknowledgement of the existence, and validity, of many possible outcomes from the learning process. Here, knowledge as an entity outside the mind does not exist, and it only becomes meaningful once a mind has constructed meaning around it.

The constructivist approach demands provision of multiple entries of knowledge so that many different learning styles can be accommodated. According to Hein, a good metaphor for this model is a multi-media encyclopedia. These must have a clear format, with easily understood orientation to key areas of knowledge, while not necessarily forcing a learner down any one knowledge path (Hein, 2004). In following this approach, museums must identify individual learning styles, and particular care must be taken to ensure that all demographics and cultures are accounted for in the design of a constructivist exhibit or program (Hein, 1991). Related to this approach is also the use of advanced organizers. These are useful aids, such as concept primers, overviews, and topographic organizers such as simple maps, which give the learner some kind of easily understood reference to build further knowledge on once he or she arrives at the museum (Hein, 1991). Hein and Screven (1991) found that such advanced organizers substantially increase learning in exhibits.

Another variation of the constructivist model is the closely related socio-cultural model, promoted by Falk, Dierking, Borun and others, which stays true to the main ideas behind constructivism, but adds that the ability to interact with others during an exhibition or educational session is an essential component to the process and reinforcement of learning. Referring to a Boston Museum of Science exhibit that employs this learning theory, Hein (1991, p.10) states, "Learning was a social activity. In family groups, the conversations became more democratic and involved more members…as family members shared, discussed and confirmed what each had learned while perusing his or her preferred modality.

Increasingly, the constructivist and socio-cultural theories are being adopted by many museums, including those in the UK (Hooper-Greenhill, 2007). One way in which these models have driven museum informal education is their influence on several of the frameworks used to structure evaluations. These frameworks place the impact a visitor or student gains from an exhibit or program at the forefront of the evaluation process. The categorization of these impacts

allows for comparisons across other galleries and exhibits whose evaluations have been guided by the frameworks.

2.4 Introduction to the ILFA and ISE Evaluation Frameworks

Recently, standardization of an evaluation program developed by the Research Centre for Museums and Galleries (RCMG), in the Department of Museum Studies at the University of Leicester, and commissioned by the Museums, Libraries and Archives council (MLA), has resulted in the Learning Impact Research Project (LIRP) and the development of a framework that uses Generic Learning Outcomes (GLOs) to measure learning in museums (Hooper-Greenhill, 2002). According to Hooper-Greenhill "evaluation is new to the UK; while well established in the USA, it has not been as well established here" (2007, p.7).

In the US, science museums are further along than many others in the field of evaluations. A key tool which is aiding them is the National Science Foundation's "Framework for Evaluating Impacts of Informal Science Education Projects." The framework was established in 2008, and consists of a report that describes a process of evaluating informal education programs based on 'impact categories.' The framework also includes a Project Monitoring System, which establishes an organized database of all ISE projects, and which can be used to analyze trends ranging from individual projects to the entire informal education evaluation field. (Allen, Campbell, Dierking, Flagg, Friedman, Garibay, Korn, Silverstein, Ucko, 2008). The framework's goal is to promote Science, Technology, Engineering, and Mathematics, not only by ensuring that learning institutions can be evaluated for their effectiveness, but also as a way of allowing them to build up from their previous research and that of others, ultimately leading to improved practices (Allen et. al., 2008).

The evolution of museum evaluations has yielded several generic frameworks for evaluating the effectiveness of any given exhibit. These frameworks have been developed through consultation with experts in the field of learning, and are based on many of the learning theories already introduced (Hooper-Greenhill, 2007). Here we introduce the general layout of both the British 'Inspired Learning for All' framework, and the 'Framework for Evaluating Impacts of Informal Science Education Projects' (ISE), an American counterpart from the

National Science Foundation (NSF). We also present some previous applications of the two frameworks.

The ILFA framework is based on the concept of Generic Learning Outcomes (GLOs). As Hooper-Greenhill states, "these are educational goals which have been identified and can be used as broad categories for the aggregation of individual learning experiences" (2007, 10). These outcomes provide a jump pad from which to launch an evaluation of a museum exhibit or educational program. The counterparts to the ILFA GLOs are the ISE framework's 'impact categories'. Neither of these categories gives a formula for carrying out any evaluation. This is because they must be generic enough to be used in any informal learning environment. Instead, appropriate evaluation methods are required to assess the impacts themselves (Allen et al. 2008).

A summary of both types of outcomes is presented in Table 1. These two frameworks have much in common with each other, including similar evaluation categories. This is because learning is always the goal of the frameworks, whether it is occurring through an object handling session at the British Museum or an interactive exhibit in the Museum of Science in the US.

Four broad evaluation efforts have been carried out in the UK using the ILFA framework. These were done from 2003 to 2007, with the 2007 'Inspiration, Identity, Learning: The Value of Museums Second Study' being the most recent. This broad museum education evaluation program involved 50 regional and 12 national museums, which included the British Museum. (Research Centre for Museums and Galleries (RCMG), 2007) The British Museum's 'Across the Board: Around the World in Eighteen Games' project was evaluated. This project's goal was to establish educational programs around play and creativity for pre-school aged children, while supporting the National Curriculum for KS1, 2 & 3 (Key Stages 1, 2 and 3 correspond approximately to grades 1-3, 3-6, and 6-9 respectively in the United States) . The project involved a touring exhibition on the history of board games, which went through eight regional museums.

Table 1: ILFA and ISE Comparisons

ILFA Generic Learning Outcomes	ISE Impact Categories
1. Knowledge & Understanding	**1. Awareness, Knowledge, Understanding**
• Knowing about something • Making sense of something • Deepening understanding • Naming things, people, places • Making links and relationships between things	• Change in awareness • Exercise of knowledge • Understanding of a particular scientific topic, concept, phenomena, theory, or careers central to the program
2. Skills	**2. Skills**
• Knowing how to do something. • Intellectual, key, information management, social, emotional, communication, and physical skills.	• Level of depth and skill • Engaging in scientific inquiry skills • Observing, classifying, exploring, questioning, predicting, or experimenting
3. Attitudes & Values	**3. Attitude**
• Feelings and perceptions • Opinions about self-esteem • Opinions or attitudes towards other people, organizations, or subjects • Positive and negative attitudes • Empathy	• Measurable demonstration of change in attitude towards particular scientific topic, concept, phenomena, theory, or careers central to the program • Empathy for animals and their habitat. • Appreciation of role of scientists in society
4. Enjoyment, Inspiration, Creativity	**4. Engagement or Interest**
• Having fun • Being surprised • Creativity • Innovative thoughts, actions or things • Exploration, experimentation and making	• Measurable demonstration of assessment of, change in, or exercise of engagement/interest in a particular scientific topic, concept, phenomena, theory, or careers central to the program
5. Activity, Behavior, Progression	**5. Behavior**
• What people do • What people intend to do • What people have done • Change in work, study management • Progression towards further learning	• Measurable demonstration of assessment of, change in, or exercise of behavior related to a STEM topic • Particularly relevant to projects that are environmental in nature or have some kind of a health science focus since action is a desired outcome
	6. Other
	• Project specific.

2.5 Practical Categories for Exhibit Evaluations

According to Morris Hargreaves Macintyre Consultancy and Research, "MLA's…GLOs offer some hope that things are changing [in museum evaluations]…although the practice of measuring these outcomes is still in development."(2005, p. 6) In attempting to design museum exhibit evaluations which utilize the categorization of exhibit impact on visitors, museums have focused on developing practical ways of assessing visitor motivation and meaning making.

2.5.1 Motivation

Visitor motivation is an aspect of museum learning that is already encompassed by the "Enjoyment, Inspiration, Creativity" GLO of the ILFA framework, and the "Engagement or Interest" impact category of the ISE framework. To develop a practical method for measuring this museum exhibit impact, evaluators are trying to develop ways of indexing levels of engagement. One such way of quantifying engagement is presented in Table 2 (Morris Hargreaves Macintyre, 2005, p. 9). In this model Social, Intellectual, Emotional, and Spiritual aspects of engagement are ranked in a hierarchy. The hierarchy considers a Spiritual motivation, a drive which elicits contemplation and stimulates creativity in the visitor, as something which drives the deepest level of engagement. Social motivations, such as the comfort and security elicited by the museum environment and the seeking of entertainment, provide only the minimum amount of driving force for a visitor to engage with an exhibit (Morris Hargreaves Macintyre, 2005, p. 9).

Table 2: Hierarchy of Visitor Motivation

Morris Hargreaves McIntyre's Hierarchy of Visitor Engagement		
Spiritual	• Escapism • Stimulation of creativity	• Contemplation
Emotional	• Aesthetic pleasure • Moving • Experience the past • Insight	• Awe and wonder • Personal relevance • Nostalgia • Sense of cultural identity
Intellectual	• Acad/prof interest • Self-improvement	• Hobby interest • Stimulate children
Social	• Social interaction • To see, to do • Access	• Entertainment • Inclusion, welcome • Comfort, security, warmth

While the details of how an evaluator ranks an exhibit can vary, the ranking process is helpful, since it can yield much more quantifiable results. A simpler and more practical way of measuring engagement is to measure the time that a visitor spends at an exhibit along with any other observable behaviors such as discussion about the exhibit, and use this information to rank the visitor's experience on a predefined level range of engagement (The British Museum, 2009).

2.5.2 Meaning Making

Another area of focus for museum exhibits evaluation is the assessment of an exhibit's ability to change the way that visitors make their own meanings from what is on display. This idea can be related to the "Activity, Behavior, Progression," GLO in the ILFA framework and the "Behavior" impact category in the ISE framework. While it is difficult to measure long term changes in the way visitors learn, observations of visitor behavior during an exhibit can determine the meaning making approach of visitors, which can later be compared to that of visitors in other galleries. By categorizing common types of behavioral approaches to learning, museums can determine which kinds of exhibits draw the biggest numbers of a certain type of learner.

One method of categorizing meaning making approaches is presented by Morris, Hargreaves, and Macintyre's meaning making hierarchy in Figure 9 (2005, p. 11). Here four

different categories of visitors are presented, and numbered in ascending order of meaning making. Additionally, each type of visitor is positioned in terms of how much direction they require to find the exhibit objects, and how much explanation they need for each object that they focus on.

Thus, according to this model, Browsers, who do not seek direction in finding specific objects, and who only glance at any objects they do find, make the fewest meaningful connections between objects which results in the lowest amount of meaning making. Because of their lack of knowledge about an exhibit, Browsers require a high degree of explanation from museum interpreters. This is also the case for the Follower, but this type of visitor is at least willing to utilize museum resources for locating the type of objects he or she may be interested in, which gives them a higher chance of developing connections between objects . A Searcher, unlike either Browsers or Followers, has a good amount of previous knowledge about a particular exhibit and so does not require as much explanation, but rather seeks more information about their topic of interest. Finally, the Researcher, with a well developed level of background knowledge likes to make his or her own selection on which specific objects he or she would like to study and stands to make the most meaning from an exhibit of any of the four types of visitors. Figure 9 shows a breakdown of these viewing strategies.

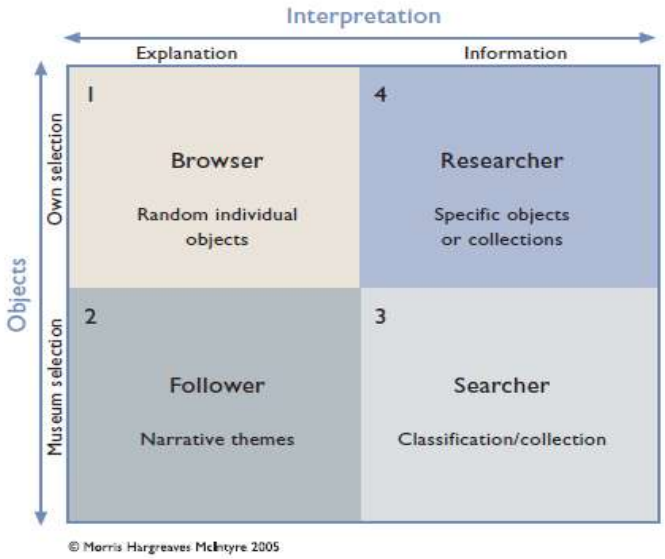


Figure 9: Visitor Meaning Making Hierarchy

Evaluators can use tracking observation patterns and questionnaire responses to determine what category best describes each gallery visitor, which can then give them a wealth of data to determine which types of exhibits draw which types of meaning makers. The goal of the museum is to encourage visitors to "advance" as meaning makers, so that Browsers become Followers and Followers become Searchers. After a particular exhibit is demonstrated to be visited mostly be Browsers, for example, improvements in the way it directs visitors to objects of interest, and the quality of explanations from interpreters may convert the Browser audiences to Followers and perhaps Searchers (Morris Hargreaves Macintyre, 2005, p. 11).

2.6 Types of Evaluations

When evaluating exhibits and programs, museums use multiple evaluation methods in order to gain the most feedback possible. These methods include front-end, formative, remedial and summative evaluations. While our methodology comprises mostly summative evaluation techniques, some techniques from the other evaluation methods overlap and have been incorporated into our evaluations.

Front-end evaluations use surveys, questionnaires and focus groups to gauge interest in exhibits before they are created. Evaluators can then determine the level of interest in a potential exhibit before it is developed based on responses from their front-end evaluations. Front-end evaluations help museums to determine which information or subject matter should be included in an exhibit or program to meet the visitors' needs and expectations (Allen, 2008).

Formative evaluation is another method which has been used to discover the interest in exhibits and programs before their completion. Museums can gauge visitor's reactions to prototypes or certain areas of a display in order to make preliminary changes. For both long term and temporary exhibits, this allows changes to be made in order for visitors to get the most from each display. Formative evaluation is also very important with the use of multimedia displays. Evaluators need to be sure a visitor can use the technology effectively without difficulty (Maria Economou, 1999, 174). The displays can be improved repeatedly to allow for the best exhibit possible, but the exhibit evaluators must make the final choice, deciding when a potential new exhibit has reached its full potential. Summative evaluation methods are also used to evaluate

the visitor experience (knowledge, understanding, satisfaction, and so forth) to help determine the exhibit's effectiveness when designing other exhibits in the future (Diamond, 2004, 16).

Summative evaluations are made after a particular exhibit or program has been in use. Their goal is to determine if an existing exhibit or program is successful and has a meaningful impact on its audience. This feedback can then become part of a larger knowledge base which exhibit designers can use to plan future exhibits. Summative evaluations are also used by museum funders to allocate funding, since they ultimately seek to push forward only those types of exhibits and programs which have evidence supporting their effectiveness. Summative evaluations often use tracking and observational studies to determine exhibit attractiveness, dwell times, and the patterns or pathways followed by visitors within galleries or entire museums. Evaluators may use surveys to get a more complete sense of the impact on the visitor, including their understanding of the concepts presented, their interest in the subject matter, and their attitude and behavior toward the exhibit or program (Allen, 2008).

Finally, remedial evaluations are used to identify and fix any functional issues with a finished exhibit or program. Even the best designed exhibits suffer from design flaws or pieces of equipment that malfunction during use. Remedial evaluations allow staff to identify and rectify these problems (Allen, 2008, 17).

State of the art exhibit evaluations in the US and Great Britain are often conducted by outside consultants and the final proprietary reports may only be available to museum staff, although increasingly such evaluations are being posted on the web, especially if they are funded through public agencies such as the National Science Foundation. Although the British Museum uses a standardized evaluation established by the Interpretations Department, they constantly improve the methods used based on lessons learned from prior evaluations. This project will conduct evaluations for the Department of Coins and Medals using the standardized evaluation method, and will also recommend ways to improve the method.

3. Methodology

The goal of this project was to assist the British Museum's Department of Coins and Medals in its continually evolving program and exhibit evaluation efforts. To accomplish this goal, we:

1. Evaluated the department's temporary exhibit (69a).
2. Evaluated the department's permanent exhibit, the HSBC Money Gallery (Room 68).
3. Calibrated the people counter recently installed in exhibit Gallery 69a.
4. Drafted an evaluation standard for the department's hands-on educational sessions.

Section 3.1 presents a brief overview of the two galleries that the project evaluated. Objectives 1 and 3 are addressed in sections 3.2 and 3.3. Objective 2 is addressed in section 3, and Objective 4 is addressed in section 3.4.

3.1 Galleries 69a and 68

Room 69a is a gallery that temporarily houses special exhibits. At the time of this project, the special exhibit was "The Splendour of Isfahan: Coins from Iran". The gallery is a small room located in the museum's upper floor, with one entrance from Greek and Roman Life Gallery 69 (See Appendix A, Figure 64). The gallery is not as readily accessible as other galleries which have multiple entrances and lie on the main path that visitors take to pass through the upper floor galleries.

A simplified map of the gallery is presented in Figure 10. The gallery contains several cases, objects and panels.[1] Cases containing objects on exhibit are shown by numbers 1 through 11; panels containing pictures and condensed commentaries are indicated at P1 through P8. Gallery 69a includes a door leading to the Department of Coins and Medals, through which staff

[1]

Panel – A flat board which can contain tables, pictures, or diagrams with background information related to the exhibit topic.

Case – A glass container used to store and display objects in a gallery.

Object – An individual item on display, such as a coin.

and educational program visitors must pass. A reception window located next to this door is used to receive these visitors along with any other guests which have business with the department. One of Gallery 69a's main features is the brightly lit Case 11 (See Figure 10), which contains, among other objects, a colorful Iranian vase and large coins that aim to draw the visitors into the gallery (See Figure 11).

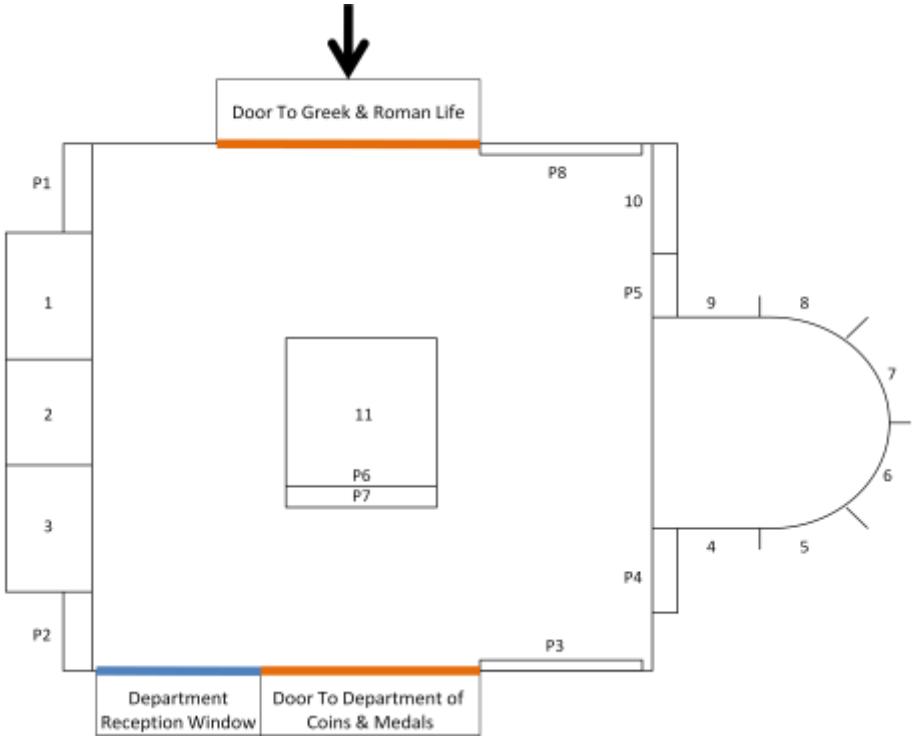


Figure 10: Floor Plan of Gallery 69a

Figure 11: Case 11 in Gallery 69a

On the other hand, the permanent HSBC Money Gallery in Room 68, has much more room for the visitors to move through, and includes two entrances, one from Greek and Roman Life Gallery 69, and another from the Museum's South Stairs and Time Gallery lobby (See Appendix A, Figure 64). This tends to lead to a wide range of visitor movement patterns, as each visitor is free to either zigzag across panels or follow the flow of the gallery on either side. A simplified map of the gallery is presented in Figure 12.

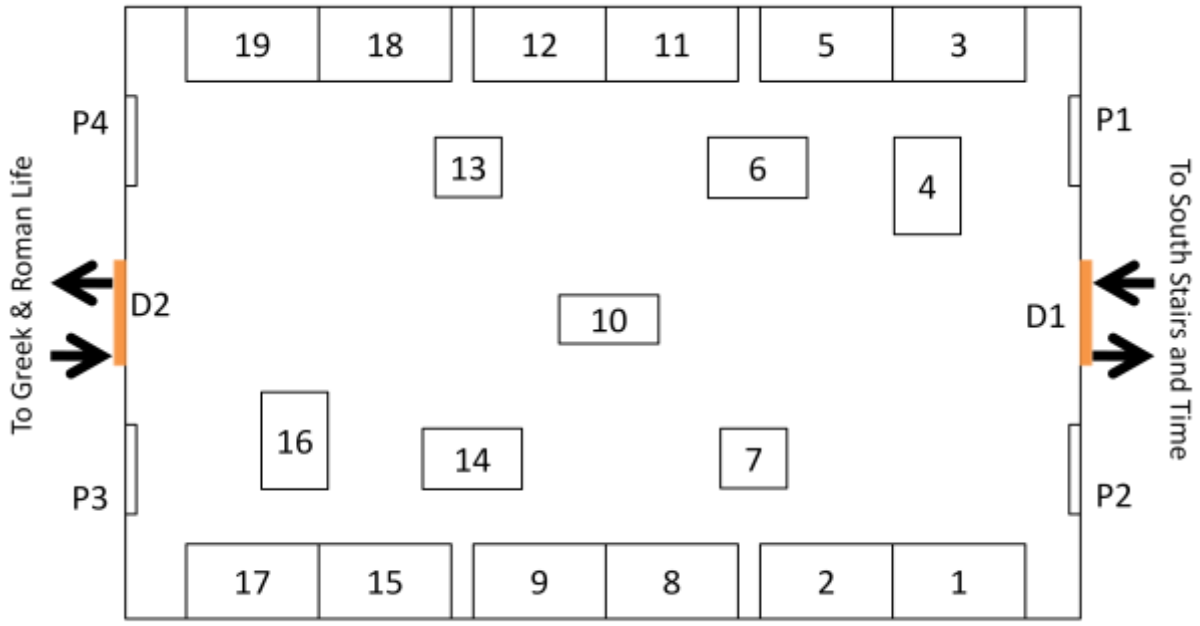


Figure 12: Floor Plan of HSBC Money Gallery (Gallery 68)

One Case to note is the central the one labeled 10 in Figure 12. This is the only dynamic case in the gallery, changing temporarily to present a particular story relating to money to visitors. When this project was conducted, the central case's theme dealt with currency and its value, focusing on British social reformer Robert Owens' Labour Exchange, and presenting an instance where currency was valued by the number of hours a person worked to earn it rather than the usual monetary value (see Figure 13).

Figure 13: Case 10 in Gallery 68

The overall layout of Gallery 68 is also quite different from that of Gallery 69a which is used for temporary exhibits. In Gallery 68 the objects are generally arranged to flow chronologically from right to left with respect to Figure 13. The displays which hug the walls are also thematically grouped, with the top displays (Case 19, 18, 12, 11, 5, and 3) focusing on cultural issues of money through the ages, and the bottom displays (Cases 17, 15, 9 8, 2, and1) dealing more with information about how the manufacture of money has changed over time. The cases in the middle of the gallery typically contain larger objects such as the reducing machine (16) and cash till (13), and these also generally follow the chronological layout of the side cases.

3.2. The British Museum's New Evaluation Framework

The British Museum's new exhibit evaluation system is a framework that was created to allow for a level of standardization in the evaluation results obtained from various galleries. Previous evaluations used widely varying methodologies for obtaining visitor data, and tested for different measures, which often made it impossible to gauge the findings in terms of prior or other currently running exhibits.

The new Framework seeks to measure both quantitative and qualitative data about how successful the exhibit is and does this through two evaluation tools, tracking studies and

questionnaire surveys. Visitors are observed as they move through a gallery by the tracking studies and then asked to participate in a brief in-person questionnaire survey.

3.2.1 Tracking Studies

A tracking study is a tool that has been used by the British Museum prior to the creation of the new evaluation system. The central idea behind the tracking studies as defined by the new system is to observe visitors as they make their way through a gallery, recording their movement path, the amount of time they spend at each display and any behaviors they exhibit while viewing certain exhibits (See Appendix B and C for the worksheets used to gather this data in each gallery). These data can then be used to determine information about both the displays within the exhibit, and the viewing strategies of the visitors themselves. Individual panels, cases or objects can be evaluated for their attracting power, defined as the number of visitors which make a stop to view the item, as well as their holding power, which is determined by the length of time visitors spend at each panel, case or exhibit object.

The data that is obtained from these tracking studies can also be used to group visitors into segmentations based on their behavior. The segmentation chosen for the tracking studies in the new evaluation system are based on the model presented by Morris Hargreaves Macintyre Consultancy and Research. This model breaks down visitor movement behavior into the Browser, Follower, Searcher, and Researcher categories. A detailed description of how visitors were grouped into these categories using the tracking study and questionnaire data is included in Section 5.

3.2.1.1 Standard Tracking Study Methodology

Tracking studies in both Galleries 69a and 68 employed a similar methodology, though with some notable differences which are discussed in section 3.2.1.1 and 3.2.1.2. In conducting the studies, it was important to make sure that visitors were not aware that they were being tracked, as this could influence their movement behavior. Due to the differences in size and environment between the two galleries, specific methods were used for each to reduce our chances of being detected by the visitors.

In both galleries tracking observations would begin with a team member standing near the entrance to the gallery. After preparing for the tracking process, the team member would count visitors as they entered from the designated entrance, and the third person counted would be observed. Once a tracking was completed we would again return to the entrance, prepare to take the next tracking, and continue counting visitors to determine who to track next.

In the case that the visitor was part of a group, we still followed the movement of the individual member who walked through the door as the third visitor, and did not track the movements of any of the other group members accompanying the visitor. However, if the visitor was visually determined to be a child, or part of a school group, he or she would not be tracked and we would again restart the tracking process.

The tracking sheets used to evaluate Gallery 69a and Gallery 68 are presented in Appendix B and C respectively. Once a team member began observing a visitor, he or she would first try to identify if the visitor counted as a *walk-through*, which meant that they made no actual stops through the gallery and only glanced at particular objects. If the visitor was a *walk-through*, their movement path would not be outlined in the tracking sheet, and they would not be asked to respond to the follow-up questionnaire survey. Instead, they would be recorded under the walk-through section, with their number (#) which we assigned to uniquely identify them, the date (D) and time (T) of the visit, the group composition (GC), and the dwell time, (DT) or how long they stayed within the gallery, which was recorded using a stop watch. The group criteria which we measured were simply children and adults, which we determined visually and recorded by writing either A for adults or C for children, along with the numbers of each.

If a visitor made at least one stop at a display, their movement was sketched out in the tracking map. The amount of time a visitor spent at each display was recorded using the stop watch, and the corresponding level of engagement was noted on each display in the tracking map. Additionally, we noted the key behaviors that demonstrated engagement, including discussions among the visitors (D) and visitors taking photographs of displays (P). In a similar manner to a walkthrough, the number, date, time, group composition, and dwell time data were recorded for each tracked visitor.

3.2.1.2 Gallery 69a Tracking Study Specifics

The tracking sheet used to evaluate Gallery 69a is presented in Appendix B. While the standard methodology was used to conduct tracking studies in Gallery 69a, the gallery presented a few challenges due to its small size.

Because the room was so small, it was difficult to remain inconspicuous while conducting the tracking studies. To reduce our chances of being detected by visitors and influencing their behavior, we would loiter near the entrance of the gallery, pretending to look at the nearby displays. Thanks to the glass casings on many displays we were often able to observe a visitor through their reflections on the casings rather than drawing attention by looking at them directly.

Another problem presented by the size of Gallery 69a was that only one team member could conduct trackings at a time. Because of this, the team rotated tracking duties, usually setting the goal of conducting five trackings at a time, along with the follow up questionnaires. One last notable difference in our tracking methodology for Gallery 69a was that, since no audio tours were available for the gallery, the audio tour visitor behavior was not applicable.

3.2.1.3 Gallery 68 Tracking Study Specifics

The tracking sheet used to evaluate Gallery 68 is presented in Appendix C. Unlike Gallery 69a, Gallery 68 was a much larger room and included two entrances. Because there were two entrances, it was possible to increase our efficiency by having two team members conduct trackings in at the same time. We obtained equal amounts of trackings from each entrance in order to determine any differences between visitors entering through either door.

The size of the gallery made remaining inconspicuous a relatively easy task while conducting tracking studies. Thanks to the larger crowds of visitors and the multiple cases scattered around the gallery, it was much easier to remain inconspicuous. However, the larger size of the room and common crowds also meant that a tracked visitor could much more easily be lost, so we made sure to follow them more closely to prevent this from happening.

The method for determining walkthroughs was also similar to the one used in 69a, though due to the larger size of the gallery, we had to be more careful to follow visitors all the way

through the gallery, as there would always be a chance that they would act as *walk-throughs* through a good portion of the gallery, only to stop at one of the panels near the exits, which would then make them eligible for tracking. The standard visitor behavior and level of engagement measurements were taken as we tracked visitors, and since audio tours were available for this exhibit gallery, their use was also recorded.

3.2.2 Exit Surveys

The questionnaires used to conduct exit surveys in Galleries 69a and 68 are presented in Appendix C and D respectively. In general, the contents of each questionnaire followed the standard protocol set by the new evaluation system (see Figure 14), but some gallery specific changes were made in Question 13, and 14 to address the concerns of the curators of the individual galleries. The differences in these questions are discussed in sections 3.2.2.1 and 3.2.2.2.

Figure 14: Outline of Gallery Survey for Visitors

The questionnaires for Gallery 69a (Appendix C) and Gallery 68 (Appendix D) included a mix of closed and open-ended questions that were read to the respondent. Closed questions involved the use of response cards with a list of possible answers. The open ended questions

were included to ensure that both quantitative and qualitative responses could be gathered. Answers to the qualitative Gallery 69a question "What impression of Iran did you get out of this gallery?" (Appendix C, Question 14) could yield much richer and more varied responses than the similar multiple choice quantitative question "After spending time in the gallery, what would you say you got out of the experience?" (Appendix C, Question 15). The open ended questions for both galleries were Questions 12-14 and 16 (Appendix C and D).

3.2.2.1 Standard Exit Survey Methodology

The procedure for conducting the questionnaire surveys was identical in both galleries. Upon exiting a gallery, we asked each tracked visitor if he or she would be willing to answer a few short questions regarding their visit to help the museum improve its exhibits. We began the interview with the following preamble:

Hi, my name is ……. and I'm working on behalf of the British Museum. We are looking to find out more about our visitors and what you think about the museum. May I have a few minutes of your time for a brief interview?

We encouraged consenting visitor to give their honest opinions by saying:

Thank you. Please do not feel pressured to answer in any particular way. We will not be offended by any negative responses.

If a tracked guest refused to participate in the survey, we thanked him or her and marked the tracking study worksheet accordingly. Even without the follow-up survey, the tracking studies provided extremely valuable data that are analyzed in Section 4. If the tracked visitor was unable to speak English, they were thanked, and classified as a refusal due to language issues.

The responses to the open ended questions were recorded by a voice recorder for later transcription if the respondent consented to the recording. If the visitor did not consent to have their responses recorded, then the team member instead took notes of the responses.

Several questions (6, 9, 15, 20, and 21) required the use of a response card. In these cases, the respondent was asked the question and given a card with a variety of optional

responses. Questions 9 and 15 were each followed up with a question that asked which of the previous responses was deemed the most significant or important to the visitor.

3.2.2.2 Gallery 69a Exit Survey Specifics

To determine which questions should be included specifically relating to the current exhibition in Gallery 69a, the team consulted the gallery curator Vesta Curtis, who explained what topics she was interested in exploring for Questions 13 and 14.

Ms. Curtis was interested in discovering whether Case 11 had enough attracting power to draw museum guests into the small gallery. Therefore, Question 13 ("Did you stop/notice the centre case from outside?") addresses whether museum guests had noticed the central case before they entered the room.

In addition, Ms. Curtis was also very interested in the overall impression that Gallery 69a imparts on museum guests. As such, Question 14 ("What impression of Iran did you get from the gallery? Maybe 5 words or associations that come to mind?") asks museum guests to offer a few thoughts on their impression of Iran based upon what they saw in the gallery.

3.2.2.3 Gallery 68 Exit Survey Specifics

The questionnaire for Gallery 68 used the same basic set of questions as other surveys conducted by the British Museum. In addition, however, the team consulted Megan Gooch of the Department of Coins and Medals to determine which unique aspects of the gallery she was most interested in exploring through the survey. Ms. Gooch explained that the department regularly changes the content of Case 10, a display in the gallery which is located in the center of the room, and she was interested in exploring whether the current content of the case was effective in both attracting and engaging visitors. Question 13 ("Did you stop/notice Case 10 in the middle of the gallery? If yes, could you please explain something new you discovered after looking at it?") addresses this concern.

Ms. Gooch also explained that the department is looking to simplify and condense some of the content within the gallery, which would require the removal of some of the more verbose

descriptions on some exhibit panels. Since the department would like to avoid removing objects which museum guests already find interesting, it was important to identify those objects which were strongly attracting and deeply engaging visitors. Therefore, Question 14 ("Could you tell me something interesting you noticed/learned after passing through this gallery?") seeks to determine which objects within the gallery are particularly successful so that they are not removed if the gallery contents are reduced.

3.3 Calibration of Gallery 69a's People Counter

At the entrance to Gallery 69a, a people counter was recently installed to track the number of visitors that pass through. Unfortunately, the gross number reported by the counter does not accurately reflect the true number of visitors during any given period because:

1. There is only one entrance/exit to the gallery so the counter counts people when they enter and when they leave;
2. Staff pass back and forth through the gallery to access the departmental offices;
3. The counter cannot distinguish between visitors in groups or separated by less than one second.

The team's goal for the people counter was to provide the museum the ability to estimate the number of visitors who entered the gallery each month from the counter reading. Such data could then be used to aid in future evaluations of Gallery 69a. To formulate an equation which could be used to estimate an actual visitor count from the counter reading, we took hourly shifts over a period of one week to observe visitors and staff entering and exiting out of Gallery 69a, so that we could compare the counter readings to our own observed readings.

During each shift, a team member standing near the entrance of the gallery discretely recorded the number of times that staff passed in and out, the number of visitors who entered the gallery, and the total number of people the counter recorded over the length of the hour. Our visitor tallies were multiplied by two to account for their inevitable exits from the gallery. We conducted these readings 3 times for each hour from 10:00 AM, to 5:00 PM, and from this data we were able to obtain average percentages of visitors from the counter total. Additionally, after each week day we also noted the counter reading, and checked it again at 10:00 AM the

following day to determine how many staff had passed through the gallery during off hours. This data was used to determine a formula for obtaining the actual number of visitors which entered Gallery 69a in one month, which is presented in Section 4.

3.4 Educational Program Evaluation

The British Museum strives to keep in step with the national push to ensure the effectiveness of museum education. It has a multitude of educational programs, including scheduled school visits for students and teachers, programs focused on families and children, paid courses that offer certifications, and skill developing workshops. The Department of Coins and Medals (DC&M), in particular, offers free weekly sessions, where school groups can handle various forms of money while they learn about the history of the objects and the cultures which used them. The subjects of these handling sessions include: Africa, Ancient Greece, Medieval and Tudor England, Roman Britain, The Victorians, and China (The British Museum, 2009).

Since our project team worked directly under the DC&M, these programs were an important part of our evaluation efforts. The team's objective was to create an evaluation protocol consisting of a teacher and student self-answered questionnaire which could be given to attendees of the program and would then be mailed back to the museum for analysis. Unlike the gallery questionnaires, both the student questionnaire (Appendix F) and teacher questionnaire (Appendix A Figure 64) were designed to be self-conducted, in order to give teachers and students the ability to respond in their own time rather than being forced to spend extra time at the end of an hour long session.

We used previous evaluation protocols as a starting point for creating the teachers' questionnaire, and modified it to be concise and clear, while at the same time extending and adding questions as which addressed the main concerns of Ms. Adams. One question was whether she herself was an effective session teacher in the view of the attending teachers and this was addressed in the "Enthusiasm and manner of the session teacher" and the "Quality of teaching/presentation" rating categories of Question 1.

Ms. Adams was also interested in knowing if and how teachers were using the support notes and activity sheets provided to them by the museum prior to the session, and this is

addressed by yes/no Question 3 ("When you booked, were you sent the Support Notes for Teachers for the session? If yes, did you use any of the pre-session ideas? Do you plan to use any of the follow up ideas?") and multiple choice Question 8 ("For the gallery-based part of your visit today, did you : …"). A general summary of the teachers' questionnaire is presented in Figure 15.

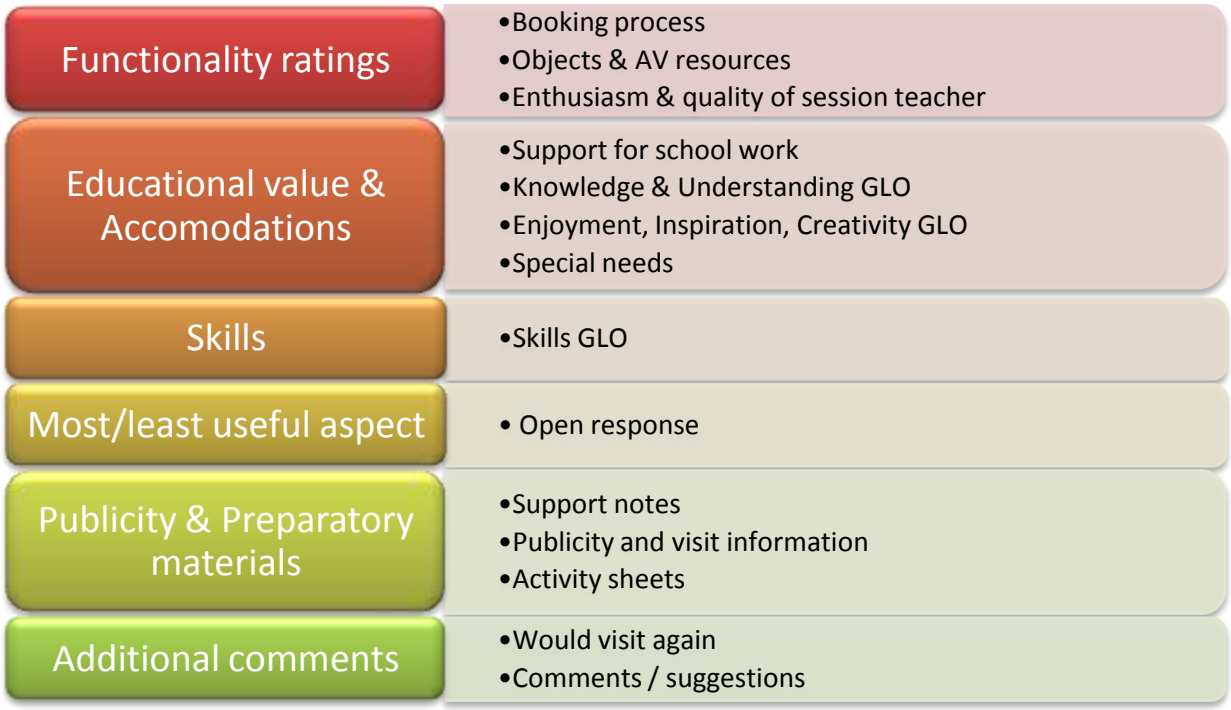


Figure 15: General Outline of Teacher Surveys for Educational Sessions

We also included questions in both the students' and teachers' surveys which measured Generic Learning Outcomes (GLOs) as specified by the Museums Libraries and Archives Councils' Inspired Learning for All Framework. The three GLOs tested for in the teachers' questionnaire were:

1. Knowledge and Understanding
2. Enjoyment, Inspiration, Creativity
3. Skills

The rating questions "How well did the session help your students to develop their knowledge and understanding of this topic?" and "How well did the session engage your students' interest and enthusiasm?" (Appendix , Question 2) targeted GLOs 1 and 2 respectively,

while each rating category in Question 3 targets GLO 3 and tests for multiple skills. In the student's questionnaire, open ended Question 4 (Appendix F, "Please draw a picture of what you liked most at the museum.") can yield in a variety of responses which demonstrate many different GLOs.

3.5 Timeline

To help accomplish our goal, we planned and followed a detailed schedule. The following is a Gantt chart summarizing this schedule.

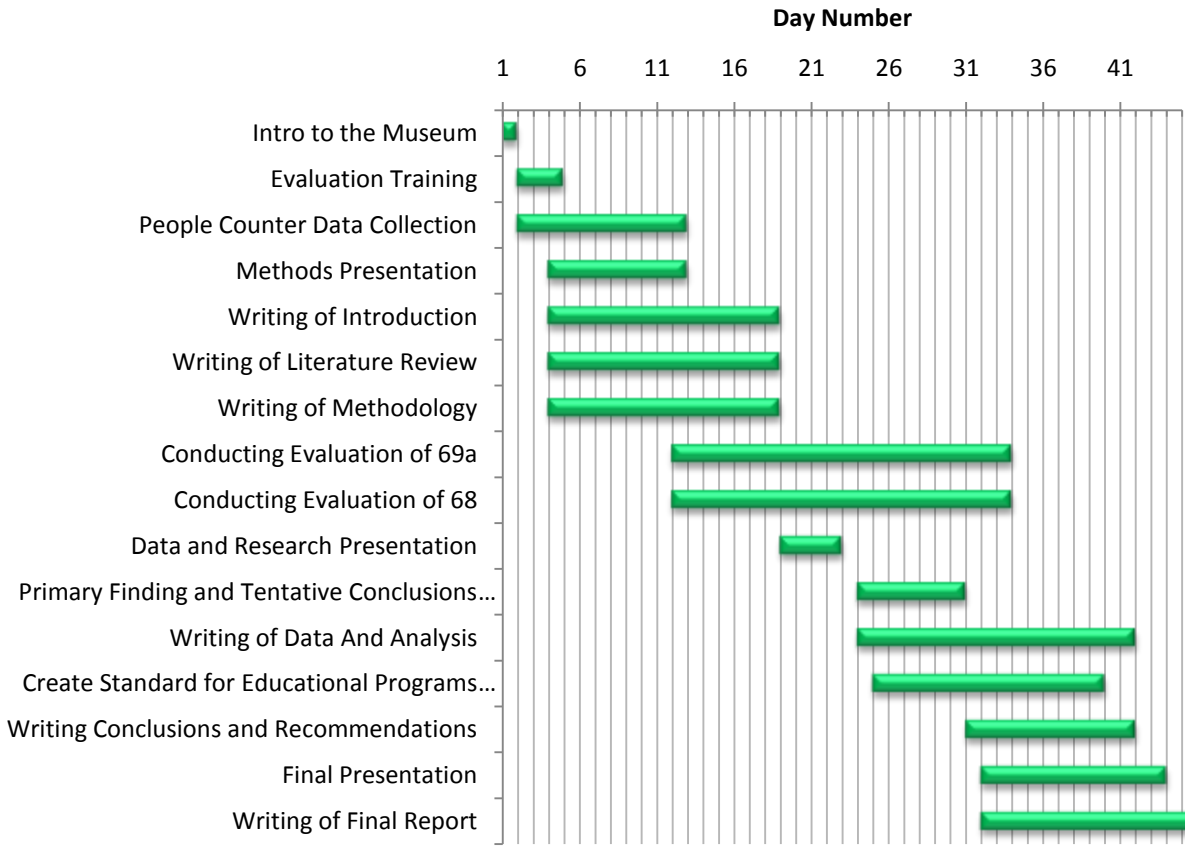


Figure 16: Timeline for Completion of Goals

4. Data and Analysis

In the course of the project, the team collected a great deal of data regarding the galleries. The data and analysis chapter presents an organized summary of the data, summarizes the findings, and explores possible trends in the data. Section 4.1 reviews the people counting data, Section 4.2 then explains the data collected in Gallery 69a, Section 4.3 examines the data collected in Gallery 68, and Section 4.4 compares the analysis of Galleries 69a and 68 to the overall museum.

4.1 People Counter

To analyze the effectiveness of the people counter, the team counted the number of staff and guests that passed through the sensor in a sample hour, and determined the reading that would be expected from the counter if it had registered one count for every instance of someone passing by the sensor. We were then able to calculate the percentage of the actual reading after one hour of data collection that corresponds to the number of guests who entered the gallery. In so doing, the team was able to correct for staff passing the sensor and the instances where the sensor was not able to count every member of a group as it passed by. The team recorded who entered and exited the gallery for a total of 16 hours on a variety of days and also at a variety of hours throughout the day while the museum was open. The average percentage of the people counter which corresponds to the number of guests entering the gallery is shown in the Figure 17 below.

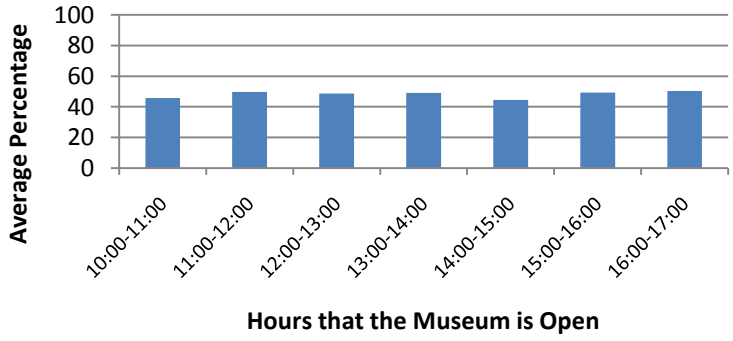


Figure 17: Percentage of the People Counter Readings

The team also collected readings at the close of the museum and subsequently again at the opening of the museum the next day on several occasions to determine the average traffic through the sensor that is solely due to staff traffic while the museum was closed. The team repeated this process until it was able to formulate an expression which the museum staff could use to estimate the number of guests that entered the gallery in a given month, with a small margin of error. The final equation to describe the guests entering the gallery is shown below. This equation was placed into a Microsoft Excel file for easy use by the museum staff in the future.

$$N_G = 0.48N_C - W_D\ (150)$$

- +/- 3.83%
- N_G= Number of guests entering the gallery in one month
- N_C= People counter reading after one month
- $W_{D=}$ Number of Work Days in that month

Figure 18: Equation to Describe the Number of Guests who Enter the Gallery

4.2 Gallery 69a

To analyze Gallery 69a, the team tracked the movements of 100 guests through the gallery between March 27, and April 18, 2009. An additional 31 guests entered the gallery, but did not view anything before exiting and were therefore not tracked. Of these 100 guests, 43 agreed to answer a questionnaire about their experience in the gallery, 39 refused due to language difficulty, 16 guests refused due to time restrictions, and 2 people refused for other reasons, as shown in Figure 19.

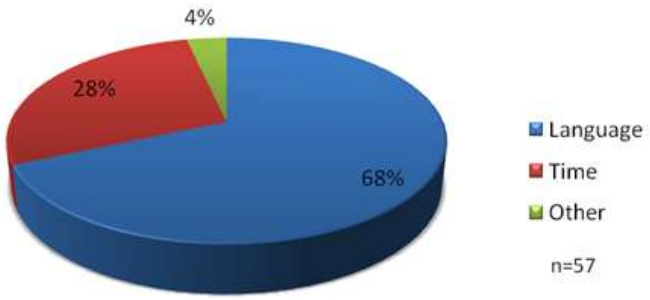


Figure 19: Reasons Guests Refused to take the Questionnaire in Gallery 69a (n=57)

4.2.1 Tracking Survey Findings

We tracked 100 selected guests that entered the gallery following the protocols described in Section 3.2 (See Appendix B for an example tracking sheet). As shown in Figure 20, 42% of the guests were visiting the gallery alone, 36% were visiting in couples, 16% were in family groups and 6% were with a group of adults.

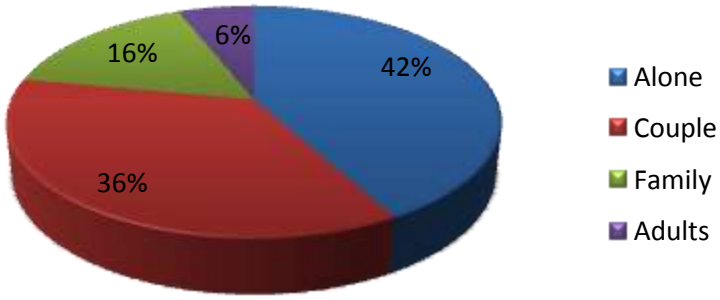


Figure 20: Composition of the Guests Tracked in Gallery 69a (n=100)

4.2.1.1 Depth of Engagement

Based upon the amount total number of panels and exhibits guests stopped at to view and the amount of time they spent at each stop, we coded the guest's level of engagement in the gallery. Guests that stopped at very few cases for a short period but looked at most of the panels in the gallery were engaged at the level of *orientation*. Guests who stopped at a few cases, but exited the gallery without looking at majority of the panels are engaged at the level of

exploration. Those guests who made several stops within the gallery that lasted for 10-40 seconds each and read a portion of the material in several panels were engaged in *discovery*. Finally, those guests who spent more than 40 seconds at several panels and seemed to read a large amount of the text were *immersed* within the gallery. Each observer used these criteria, and these classifications were reviewed within the group to calibrate the data collection and ensure consistency. Figure 21 shows that the majority of visitors to Gallery 69a were engaged in either exploration or orientation.

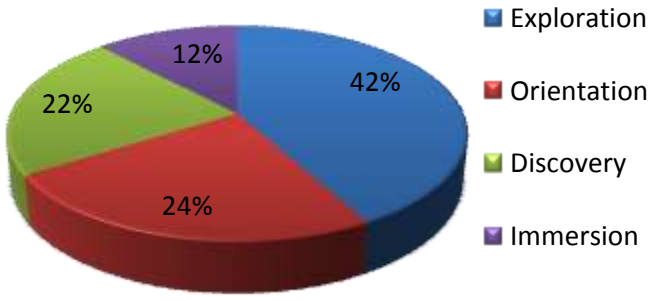


Figure 21: Depth of Engagement for Visitors to Gallery 69a (n=100)

Additional background information on visitor viewing strategies is presented below (see Section 4.2.2) based on the subset of tracked visitors who agreed to answer the exit survey.

4.2.1.2 Attracting Power of the Exhibits

The attractive power of exhibits within a gallery is important to the museum because it shows what types of objects draw the visitor into a gallery. The exhibits with a strong attracting power are usually the exhibits which the guests approach first when they enter the gallery. Figure 22 shows the number of times that people stopped at each case first upon entering the gallery. As expected, a majority of visitors stopped first at Case 11, which is the main case just inside the doorway and clearly visible from Gallery 69, while a large number of guests also stopped at Case 1, which is the first main case on the right upon entering the room. Based on our data, it is difficult to know if this pattern truly represents the attractive power of the current contents of these two cases or if it is also a function of the location of the cases in relation to the entryway.

The exhibits, which contain objects and text, are numbered 1 through 11, and the panels which include only text and/or a picture are labeled P1 through P8. No visitors made their first stops at those cases and panels which are white. As indicated by the arrows I Figure 23, 41% of visitors stopped at Case 11 first and 21% of visitors stopped at Case 1 first.

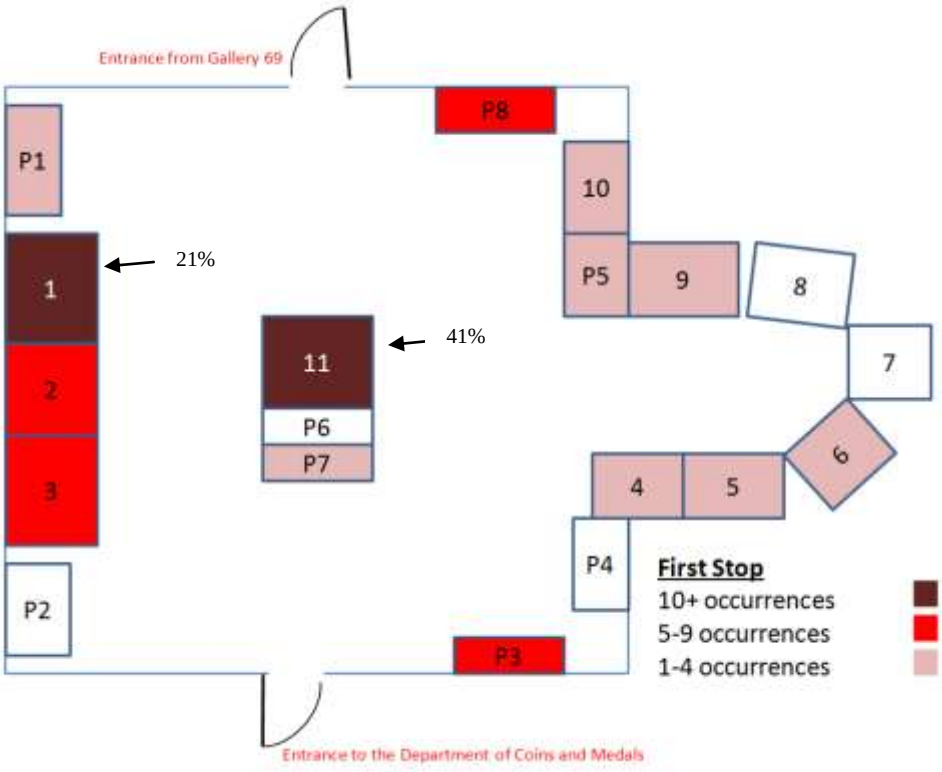


Figure 22: Cases where Visitors Stop First Within Gallery 69a (n=100)

In addition, the attractive power of the exhibits is also explained by the percentage of guests that stop at each panel. As in Figure 22, Figure 23 shows that many guests stop at Cases 11, 1 and 2, but then proceeded onto different parts of the gallery and explore what seems to interest them. The median percentage of guests that stop at each case or panel is 32%.

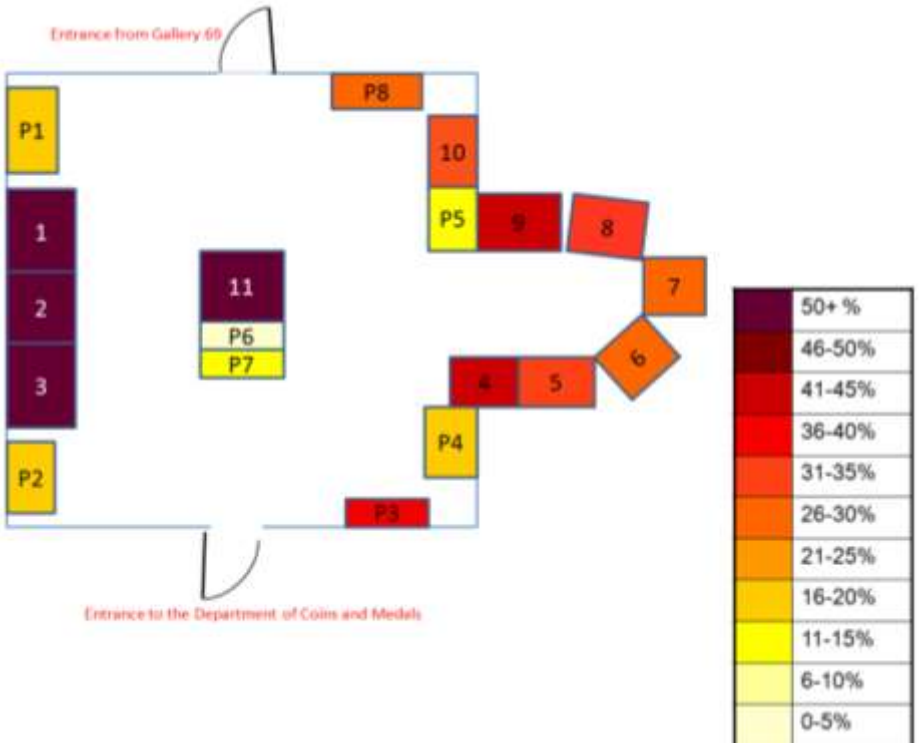


Figure 23: Percentage of Visitors who Stop at Each Case in Gallery 69a (n=100)

4.2.1.3 Exhibit Holding Power

The holding power of exhibits within the gallery is also very important to the museum, because it describes what types of objects visitors find interesting enough to thoroughly research. As visitors proceeded through the gallery, the team coded each stop they made within the gallery by the amount of time the guest was stationary, engaged in an exhibit. Figure 24 shows how long visitors stopped in front of each exhibit. Case 11 had the highest number of Level 4 stops, with 8 visitors who spent more than 40 seconds engaged in the material. Cases 8, 9 and Panel 1 each held 7 visitors for 40 seconds or more. These cases held a greater proportion of visitors for a long period of time, and had a relatively low proportion of visitors stay only briefly. Cases 1, 2, 3 and 11 were quite attractive initially (Figure 22) but held most guests for relatively brief periods (Figure 24). Indeed, Figure 24 shows that between 86.7% and 92.7% of the guests that stopped at these cases stayed for less than 40 seconds.

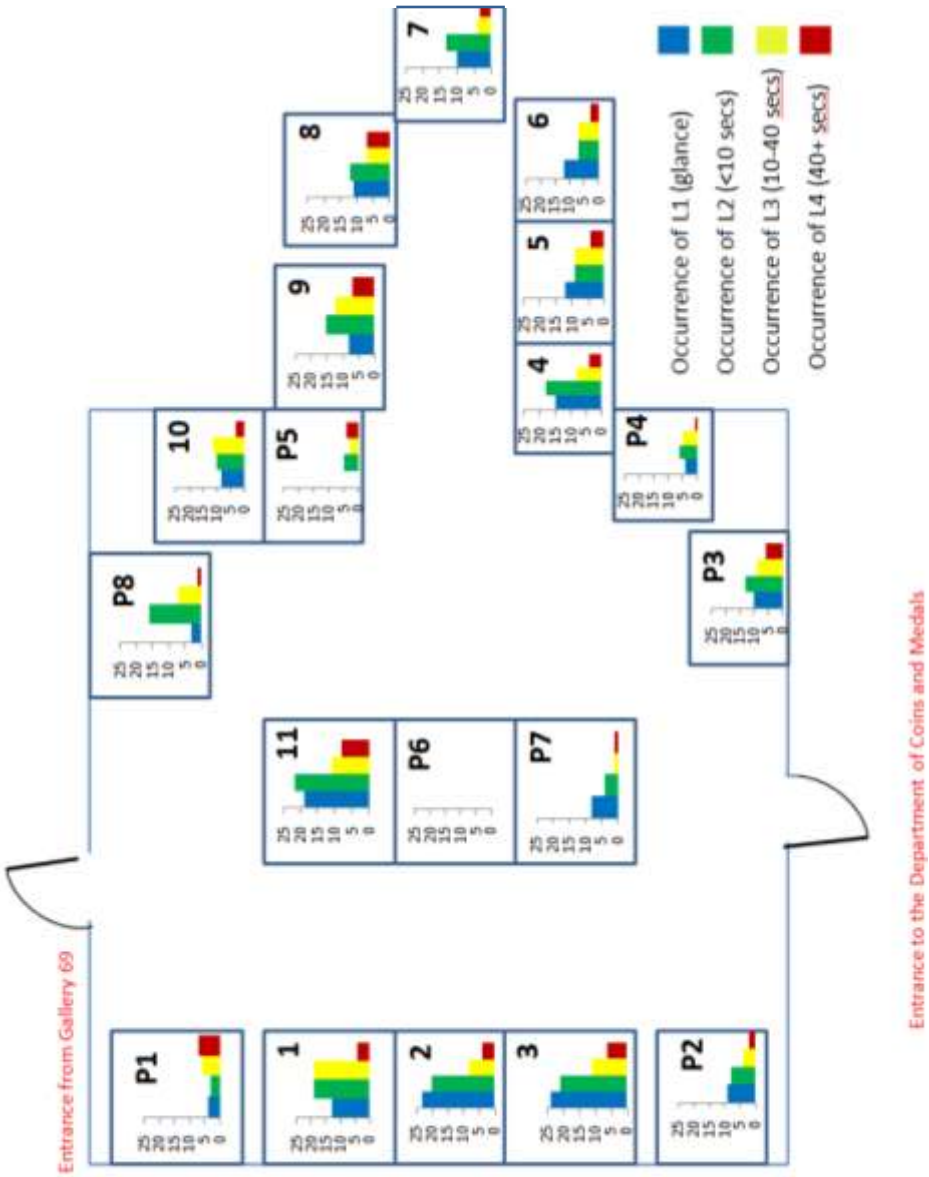


Figure 24: Length of Stay at Each Exhibit

4.2.1.4 Dwell Time

The overall time guests spent in each gallery (dwell time) is important to the museum since it indicates how well a gallery is able to hold people overall, and allows comparisons to be made between different galleries or with different content and arrangements of exhibits in the

same gallery . Figure 25 shows nearly all of the visitors to Gallery 69a spent less than 200 seconds in the gallery. Because the distribution is so skewed, the median dwell time for guests in Gallery 69a was 118 seconds, and the average dwell time was 198 seconds. Evidently, very few guests spend more than 200 seconds perusing the gallery.

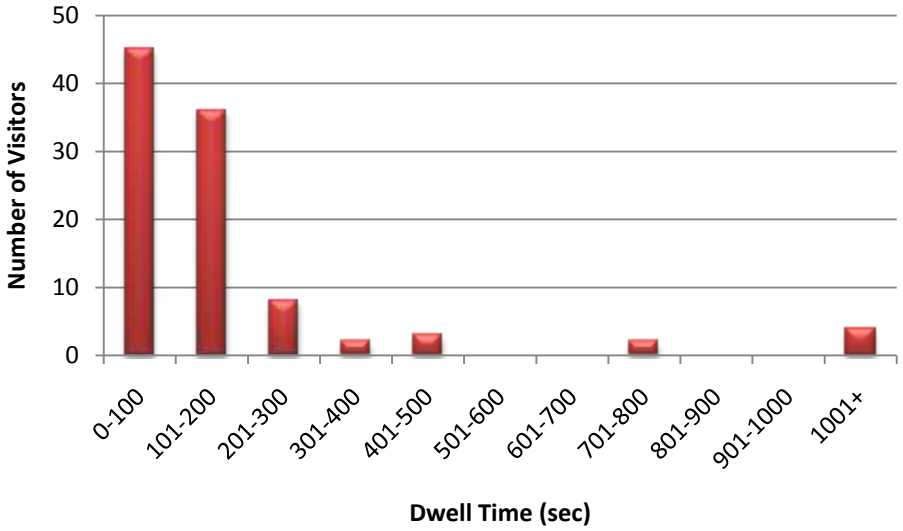


Figure 25: Dwell Times in Gallery 69a (n=100)

Figure 26 below shows how many stops visitors made within the gallery during their visit. The median number of stops within the gallery was five. As indicated in the data presented above, most visitors are browsers who tend to 'bounce' through a gallery, moving from case to case in a relatively free-form fashion and without staying at any one case very long. Figure 26 shows that most visitors to Gallery 69a stopped at fewer than nine panels and cases out of a total of 19. Only 17% of guests visited more than 10 (i.e., over half) cases and panels.

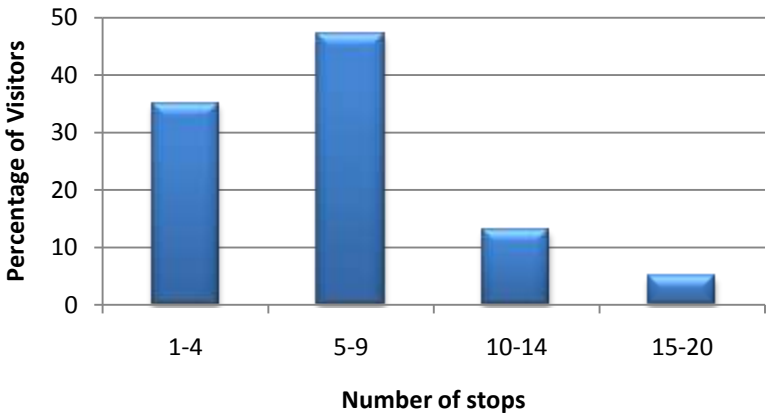


Figure 26: Number of Stops Guests Made within Gallery 69a (n=100)

4.2.2 Questionnaire Survey Findings

We asked each visitor who was tracked through the gallery if they would answer a brief exit survey. Of the 100 visitors who were tracked through the gallery, 43 agreed to answer the questionnaire. Fifty eight percent of survey respondents were male. The age distribution of the guests who answered the questionnaire is shown below in Figure 27. Children under 15 were excluded from the survey.

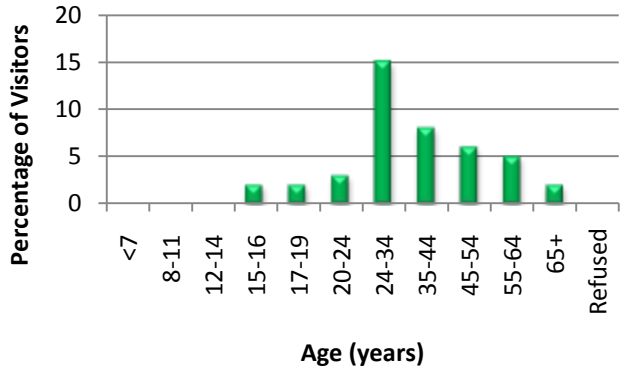


Figure 27: Age of Visitors to Gallery 69a who Answered the Questionnaire (n=43)

Visitors to the British Museum come from all over the world. Figure 28 shows the country of origin given by the 43 survey respondents. As would be expected, residents from the UK dominate within the sample. Note that this distribution is unlikely to be representative of the

entire body of visitors to the museum because many individuals who were tracked refused to participate in the questionnaire survey because of language difficulties.

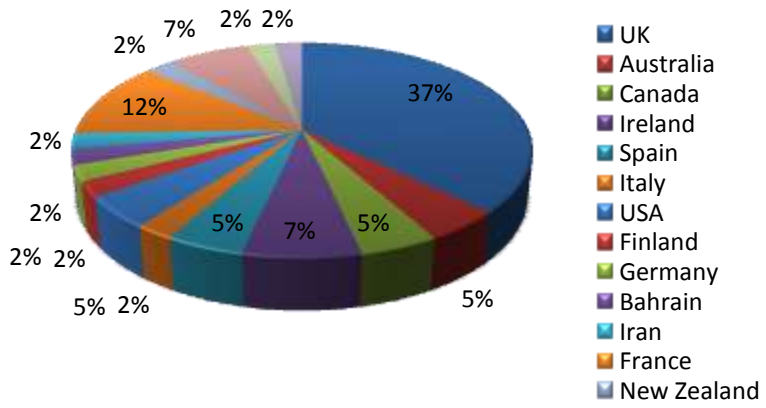


Figure 28: Current Country of Residence for the Visitors to Gallery 69a (n=43)

The first language of the museum guests is important, when determining the importance of making museum content accessible in different languages. Figure 29 shows that 47% of visitors who were able to complete the questionnaire spoke English as their first language.

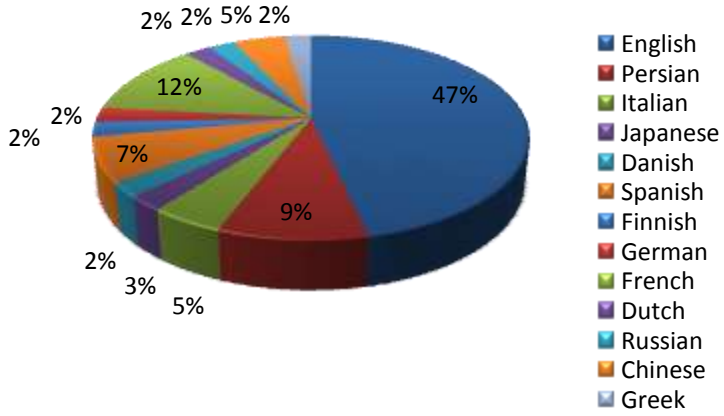


Figure 29: First Language of Visitors to Gallery 69a (n=43)

Fifty three percent of the 43 visitors interviewed in Gallery 69a said that it was their first visit to the museum. Of the remaining 20 visitors, 40% had most recently been to the museum less than one year ago, 30% had been more than one but less than 5 years ago, and 20% had not been to the museum for more than 5 years.

Sixty percent of the visitors interviewed in Gallery 69a thought that their visit to the British Museum would last 3 hours or less. Thirty two percent thought that their visit to the museum would last more than 3 hours but less than 6. The remaining 8% thought that their visit to the museum would last more than 6 hours.

Seventy two percent of the visitors interviewed in Gallery 69a said that they had little or no knowledge of the subjects covered in the gallery. Twenty four percent said that they had general knowledge of Iranian coins, and the remaining 5% stated that they were experts in the subject material.

Visitors were asked whether they had intended to visit the gallery before they got to the museum in Question 11. Only 16.2% stated that they had planned on visiting the gallery before arriving, with the remaining 83.8% of guests stating that they only wandered in. This would suggest that very few people know about the gallery before they enter it.

In order to better understand whether Case 11 draws guests into the gallery, Question 13 asked the visitors if they saw the central case from outside the room. Seventy percent of the visitors interviewed said that they had seen the central case from outside the room. The tracking data shows that 60% of visitors viewed Case 11, and that 41% stopped at it first. In addition, 21% of survey respondents mentioned objects within Case 11 as being especially memorable in response to Question 12 in the questionnaire.

The behavior exhibited by the guests was categorized into four different viewing strategies: browser, follower, searcher, and researcher. Those guests who looked at several different displays throughout the gallery for short periods of time were classified as *browsers*. Guests who went to each panel in a linear manner through the gallery exhibited a *follower* strategy. The *searcher* strategy can only be applied to those guests who answer Question 9 on the questionnaire with response categories 6-9 (see Appendix D) who had attended the museum to research a specific object or concept. The *researcher* viewing strategy is limited to those who responded to Question 7 that they had an expert knowledge of coins of Iran. If the visitor did not complete the questionnaire, then they were categorized only as a browser or a follower. Each observer used these criteria, and these classifications were peer reviewed within the group to ensure the validation of this analysis. Figure 30 shows that 57% of visitors to Gallery 69a only browsed through the gallery.

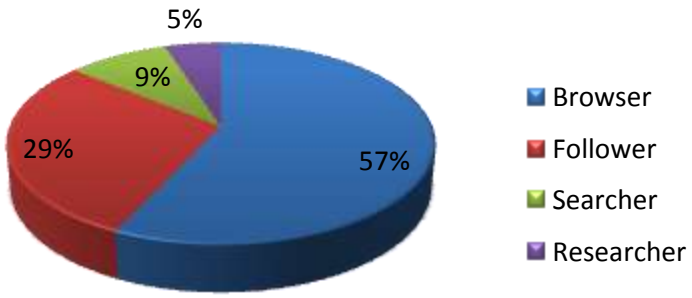


Figure 30: Gallery 69a Viewing Strategies (n=100)

In Question 6, the visitors were asked what their main motivation for coming to the museum was. From their response, we then categorized them as a type of visitor by their initial motivation for coming to the museum. Those guests who said that this was their first visit to the museum and that they were making a general visit were classified as a *sightseer*. Those visitors who said that they had come to the museum to informally improve their knowledge were classified as a *self developer*. A visitor who had been to the museum recently for a social visit and was likely here to meet with friends was classified as a *repeat social visitor*. A guest who was a *specialist* and who had come to the museum to further their knowledge by engaging deeply with the collection was deemed an *expert*. A visitor who had come to the museum with their family was categorized into the *families* category. Figure 31 shows that a majority of the visitors to Gallery 69a were classified as *sightseers* and there are no substantial differences by gender. Based on their response to this question, if a visitor did not clearly fall into one viewing strategy category they were counted in two different groups. This explains why the number of responses (n) totals 46 rather than 43.

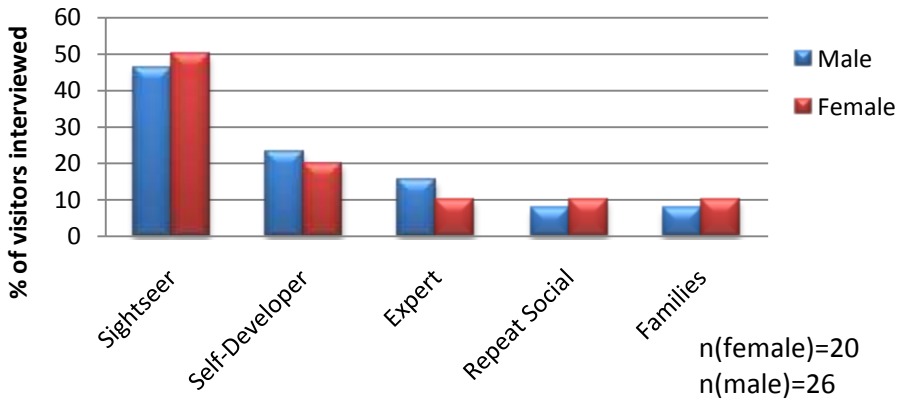


Figure 31: Types of Visitors Interviewed in Gallery 69a

In addition to describing their motivation, visitors were also categorized by their experience within the museum based on responses to Question 15 (Appendix D). A visitor who found a *social* experience would likely have answered Question 15 that they had found an enjoyable way to pass the time. A visitor who had an *intellectual* visit, likely would have answered that they learned more about other peoples and cultures. A visitor who had an *emotional* visit would have stated that they had a fascinating experience, and may have experienced a personal connection to something in the gallery. Figure 32 shows that most visitors said they had intellectual or social experiences. Men were more likely than women to say that they had a social experience and woman were more likely than men to say then had emotional or spiritual experiences.

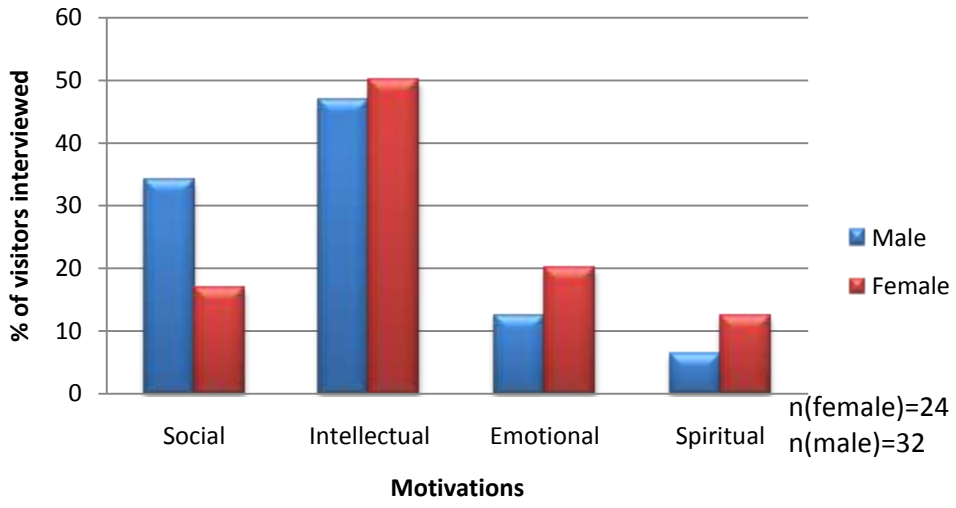


Figure 32: Type of Experience Visitors had Within the Gallery

The responses to Question 16, which asked for comments and suggestions for the gallery, were highly varied, although unfortunately only 22/43 (51%) of survey respondents actually answered the question. The responses were categorized and summarized in Figure 33. As indicated, 32% (6/22 respondents) thought the gallery was too small and the material would be better presented in a larger gallery, and 23% (4/22 respondents) said the gallery would be improved with more content.

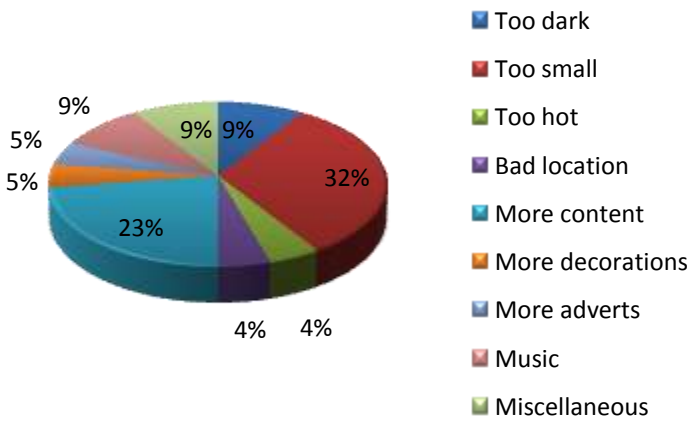


Figure 33: Suggestions for Gallery 69a (n=22)

Visitors were asked what impression of Iran they took away from their visit to the gallery. While 9 (22%) respondents expressed no opinion, most of the remaining responses were very positive. The responses to this question are summarized in Figure 34. One type of response that was given several times was an aesthetic response, commenting on the visual impression they received from the gallery.

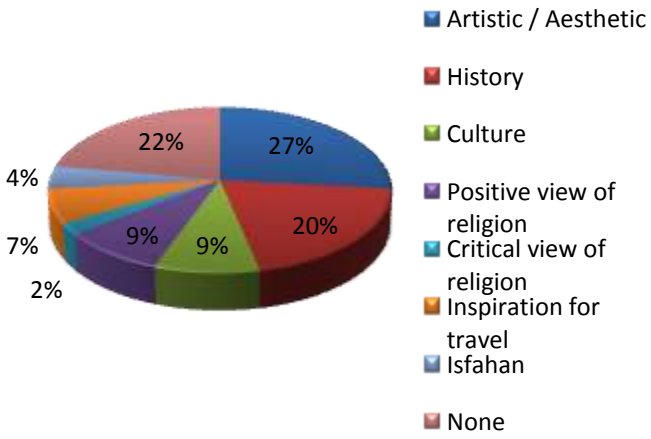


Figure 34: Impression of Iran (n=45)

The museum wishes to explore which types of objects tend to be most memorable to museum guests. Therefore, Question 12 asks the visitor which object they especially remember from the gallery. Many guests tended to remember the large map in Case 10, the pottery in Case 11 and several people commented that they found the coins in general especially memorable as summarized in Figure 35.

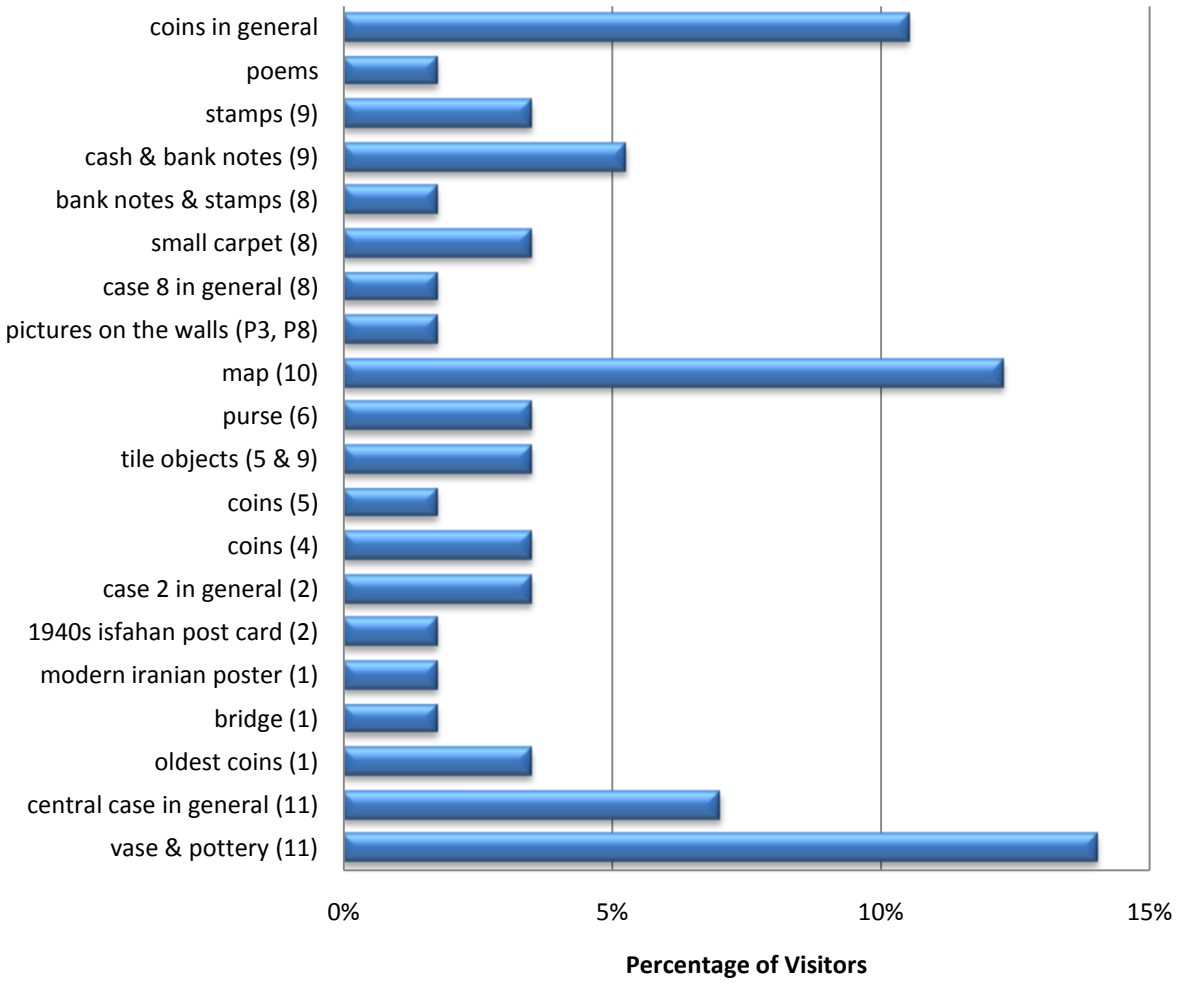


Figure 35: Memorable Objects from Gallery 69a (n=57)

Several aspects from the data collected in the tracking and questionnaire address similar issues. In an attempt to validate the sample of guests, the team reviewed the data collected from the tracking surveys and questionnaires to look for inconsistencies within the data. For example, the tracking survey notes the group composition of the party being tracked, and one of the possible responses to Question 9 on the questionnaire is that they have come to the museum because it is a nice place to spend time with friends and family. If they had been alone in the gallery, but answered Question 9, that they were at the museum with friends, then that might suggest that the visitor was confused, or that there was a mistake in the sample. No such

inconsistencies were found however, which supports the validity of the data collected by the team.

4.3 Gallery 68

To analyze Gallery 68, the team tracked the movements of 100 guests through the gallery between April 2, and April 15, 2009. Ninety additional guests entered the gallery but did not view anything before exiting, and were therefore not tracked. Of the 100 guests tracked, 43 agreed to answer a questionnaire about their experience in the gallery, 39 refused due to language difficulty, 14 guests refused due to time restrictions, and 4 people refused for other reasons (Figure 36).

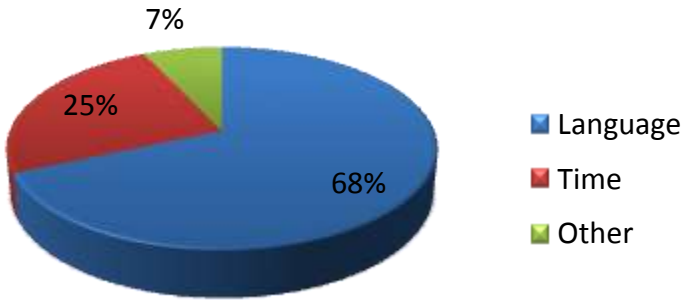


Figure 36: Reasons Guests Refused to take the Questionnaire in Gallery 68 (n=57)

4.3.1 Sample Characteristics

Upon entering the gallery, selected guests were tracked according to the protocols described in Section 3.2.1.1. Figure 37 shows that 43% of those tracked were couples and 29% were lone adults.

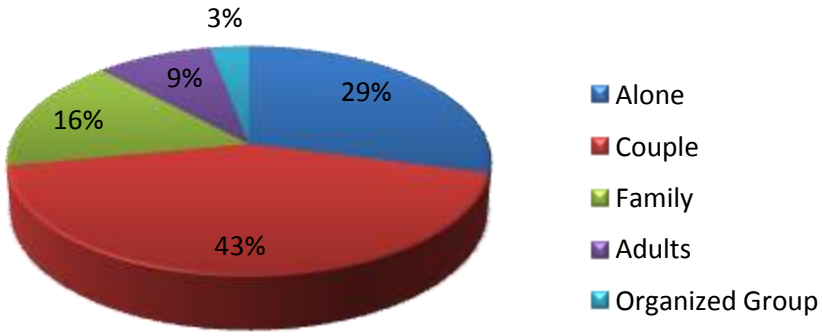


Figure 37: Group Compositions of Visitors to Gallery 68 (n=100)

4.3.1.1 Depth of Engagement

The depth of engagement of the visitors was also determined by the tracking data, as explained in Section 4.2.3. Figure 38 shows that 46% of visitors to Gallery 68 are engaged in discovery, and therefore stopped at several cases in the gallery and spent a short length of time at each case.

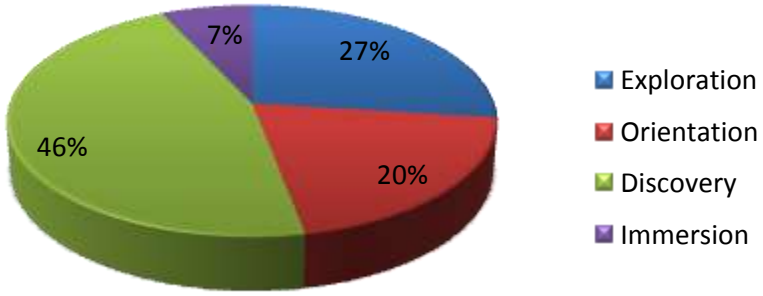


Figure 38: Depth of Engagement of Visitors to Gallery 68 (n=100)

Additional background information on the viewing strategies of the visitors which includes information collected from the subset of the sample which agreed to answer the questionnaire is presented below in further detail (see Section 4.3.2).

4.3.1.2 Attracting Power of the Exhibits

To analyze the attracting power of exhibits in Gallery 68, it was necessary to identify which door-way the guests entered through before making their first stop. In addition, the museum wanted to learn where in the gallery people tend to congregate and spend time, because they are planning to add interactive displays in places within the gallery that are not typically very crowded. Figures 39 and 40 show where guests stopped first when they entered the gallery, and also show a composite view of the tracking data of each guest tracked through the gallery.

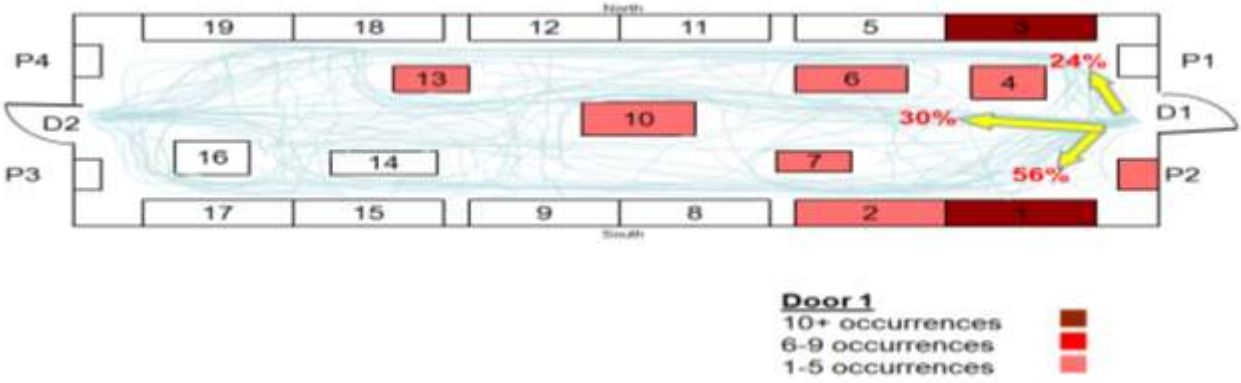


Figure 39: First Stop and Tracking of Visitors Who Entered Door 1 (n=47)

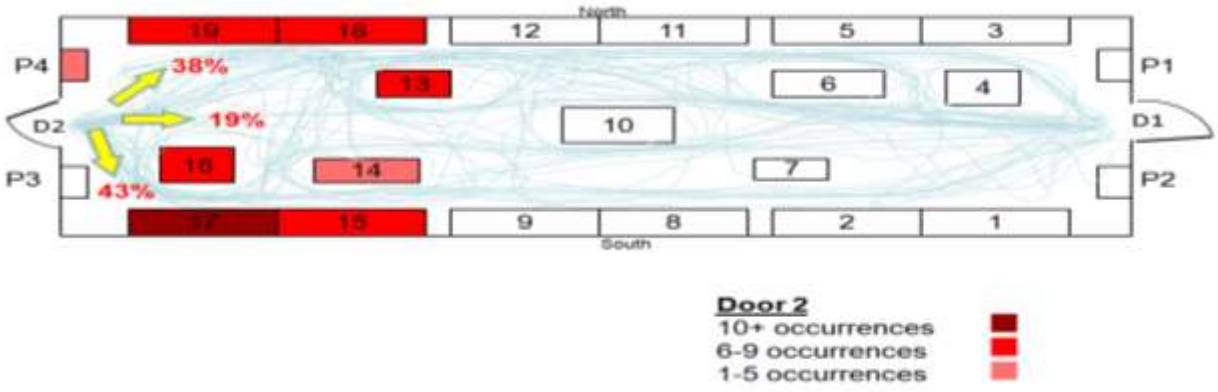


Figure 40: First stop and Tracking of Visitors Who Entered Through Door 2 (n=53)

These figures suggest that the sections of wall in the middle of the room are not generally very crowded, and therefore might be good locations to add the interactive displays. In addition, a large portion of the visitors to Gallery 68 only viewed a portion of the gallery. Of the guests who entered through Door 1 (D1), 8% only saw exhibits on the north wall, 8% only saw the exhibits on the south wall, and 10% only saw the exhibits in the middle of the room. Of the guests who entered through Door 2 (D2), 9% only saw the exhibits on the north wall, 11% only saw the exhibits on the south wall, and 9% only saw the exhibits in the center of the room. The median number of stops guests made in Gallery 68 was five out of a total number of 23 cases and panels in the gallery.

Another way to demonstrate the attracting power of the exhibits within Gallery 68 is to show the percentage of guests who viewed each case (Figure 41). The figure shows that a majority of visitors only stopped at a few cases after the one they stopped at first upon entering the gallery. It also suggests that the pinch points in the room are likely in the corners of the room. The median percentage of guests that stopped at each exhibit was 28%.

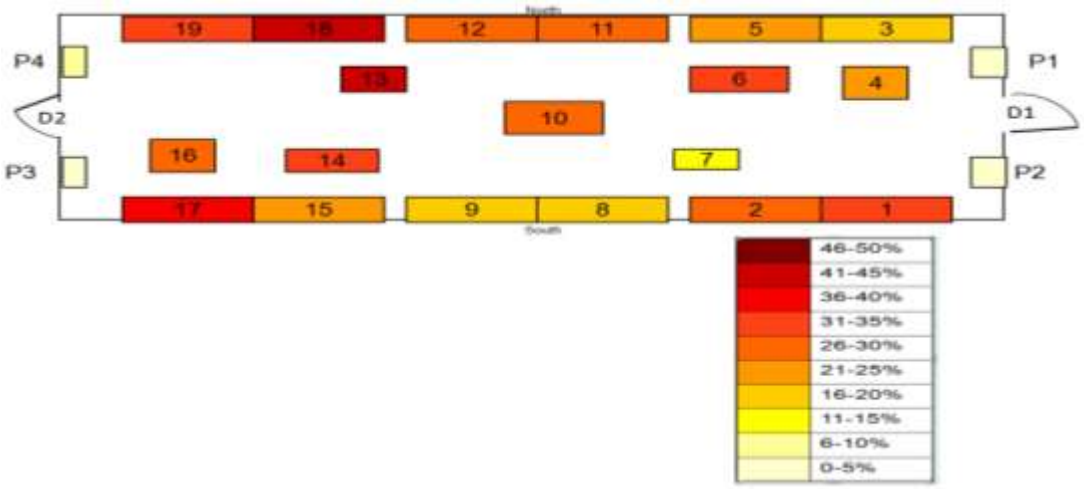


Figure 41: Percentage of Guests who Viewed Each Exhibit in Gallery 68 (n=100)

4.3.1.3 Holding Power of Exhibits

To describe the behavior of the visitors within the gallery, the time that they spent at each exhibit is shown in Figure 42. The exhibits with the greatest holding power include Cases 17 and 18. The exhibits with the greatest portion of short stops included Cases 10, 11, and 12.

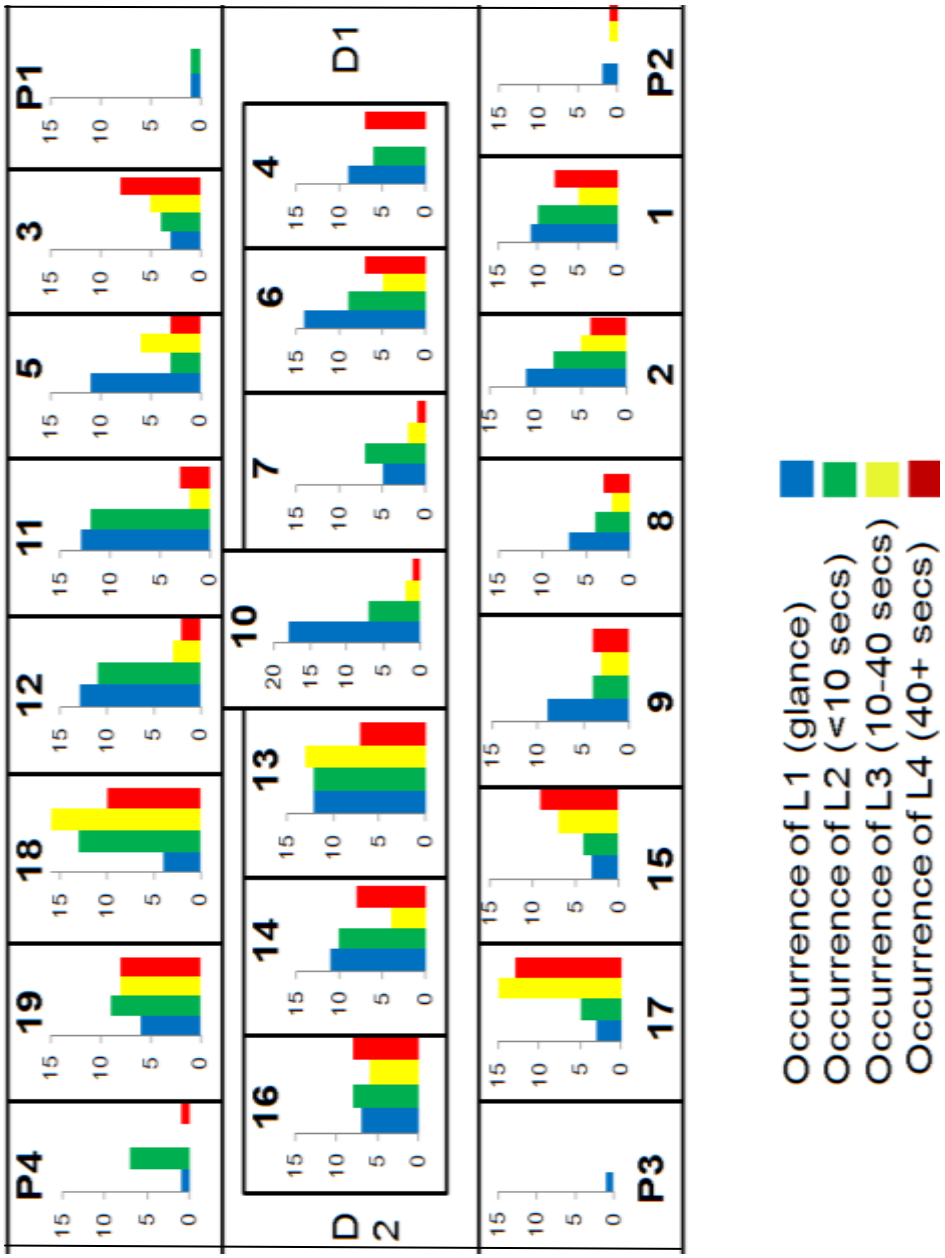


Figure 42: Length of Stay at Each Exhibit

4.3.1.4 Dwell Time

The overall time spent in Gallery 68 by each guest is summarized in the figure below. A large portion of the visitors spent nearly 200 seconds in the gallery. The median time spent by guests in Gallery 68 was 184 seconds. The overall average time spent in the gallery by visitors was 249.9 seconds. The average time that visitors who entered through Door 1 spent in the

gallery was 279 seconds, and the average dwell time for those visitors who entered through Door 2 was 224 seconds. Visitors who entered through Door 1 might have stayed longer because the storyline of the exhibits starts on the Door 1 side of the room, and guests may have therefore engaged more deeply with the gallery.

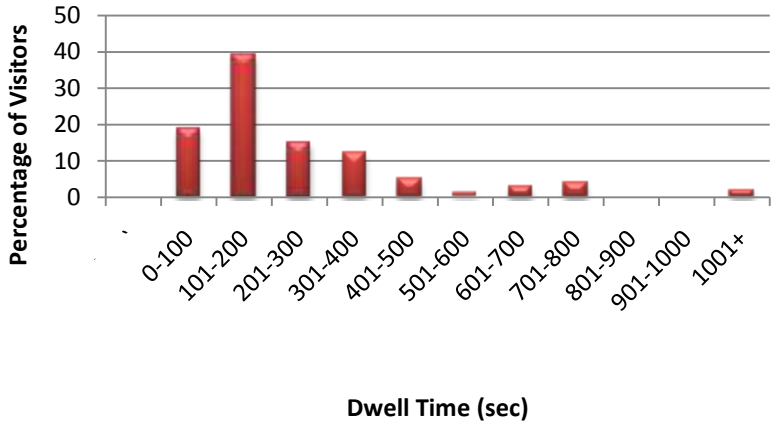


Figure 43: Dwell Time for Visitors to Gallery 68 (n=100)

There are 23 exhibits and panels in Gallery 68, and a lot of visitors to Gallery 68 stopped at only a small portion of the exhibits throughout the room, as shown in Figure 44. The median number of stops that guests made in Gallery 68 was 5 stops.

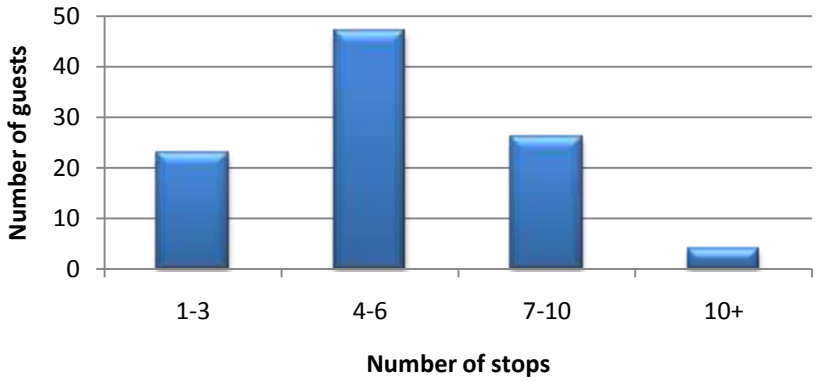


Figure 44: Number of Stops Guests Made in Gallery 68 (n=100)

4.3.2 Questionnaire Survey Findings

Once the tracking data had been collected, the team then conducted the questionnaire with those guests that agreed to participate. Of the 100 guests that were tracked within the gallery, 43 agreed to answer the questionnaire. Sixty seven percent of the visitors who agreed to answer the questionnaire in Gallery 68 were male. The age distribution of the guests who answered the questionnaire is shown below in Figure 45 and a majority of those guests were between the age of 25 and 44 years.

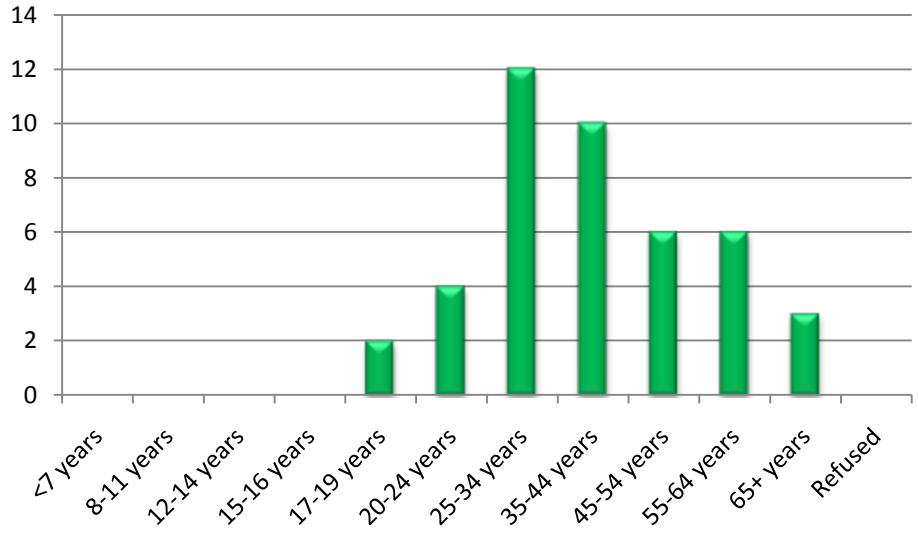


Figure 45: Age of Visitors who Answered the Questionnaire in Gallery 68 (n=43)

Figure 46 shows that 54% of survey respondents lived in the United Kingdom. Note that this distribution is unlikely to be representative of the entire body of visitors to the museum since so many individuals who were tracked refused to participate in the questionnaire survey because of language issues

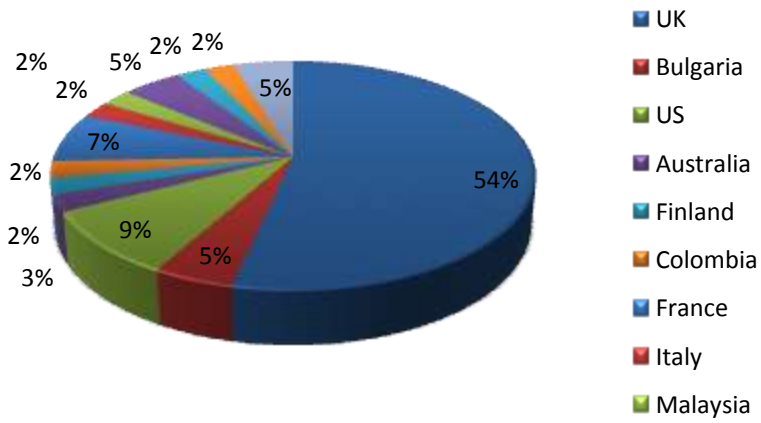


Figure 46: Countries of Origin for Guests to Gallery 68 (n=43)

The first language of the survey respondents is shown in Figure 47, and only 56% spoke English as their first language. A large portion of museum guests do not speak English as their first language, which emphasizes the museum's need to make their content available in several different languages.

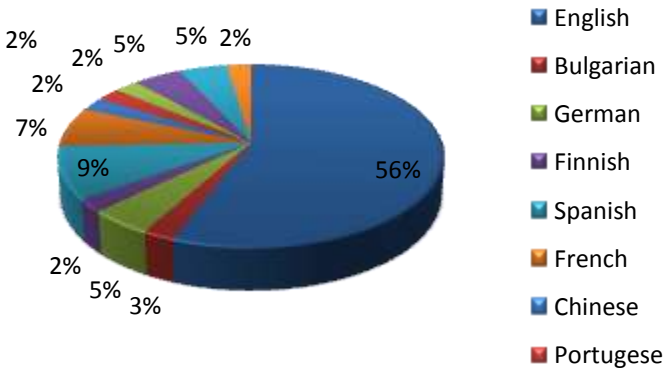


Figure 47: First Language of the Guests to Gallery 68 (n=43)

Seventy two percent of the 43 visitors who answered the questionnaire stated that it was their first visit to the museum. Of the remaining 12 visitors, 59% said that they had last been to the museum less than a year ago, 8% said that they had last been here 2 to 5 years ago, and 33% had not been to the museum for more than 5 years.

Of the visitors interviewed in Gallery 68, 67% said that they expected their visit to the museum to last less than 3 hours. The remaining 33% said that they thought that their visit to the museum would last less than 6 hours.

Fifty four percent of those interviewed said that they had little knowledge regarding the history of currency. Forty four percent said that they had general knowledge of the subject matter, and 2% said they were experts in the field.

Twenty one percent of the guests interviewed in Gallery 68 stated that they had intended to visit the gallery. The remaining 79% said that they had simply wandered into the gallery. This would suggest that the museum should do more to promote awareness of its galleries to generate greater interest in specific galleries.

Gallery 68 has a temporary case (Case 10) in the middle of the room, and Question 13 therefore asks whether the guest had noticed the contents of that case. Only 16.3% of guests interviewed stated that they had noticed the contents of Case 10. The tracking data shows that 28% of visitors viewed Case 10, but only 10% stopped at it. This would suggest that the current contents of Case 10 are not attractive enough to engage a large portion of museum visitors.

From the tracking data, guests were classified by their style of proceeding through the gallery in a similar manner as previously explained for Gallery 69a (see Section 4.2.1). Sixty six percent the visitors to Gallery 68 were browsers, and simply looked at several different panels throughout the room without spending too much time at any exhibit as shown in Figure 48.

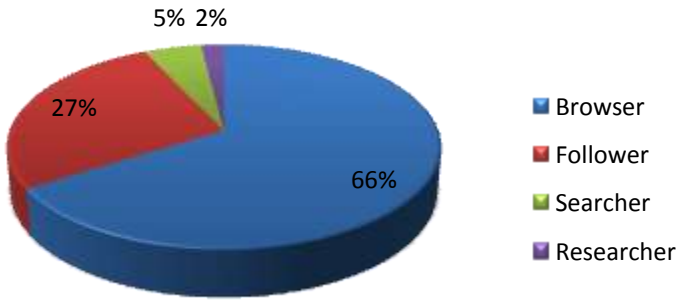


Figure 48: Viewing Strategies for Visitors to Gallery 68 (n=100)

The visitors who answered the questionnaire were categorized by their motivation for coming to the museum and placed into five visitor type categories. The method for this classification was described in Section 4.2.2. Figure 49 shows that the pattern of visitor types to Gallery 68 is similar to that of Gallery 69a, and once again there is no substantial difference by gender.

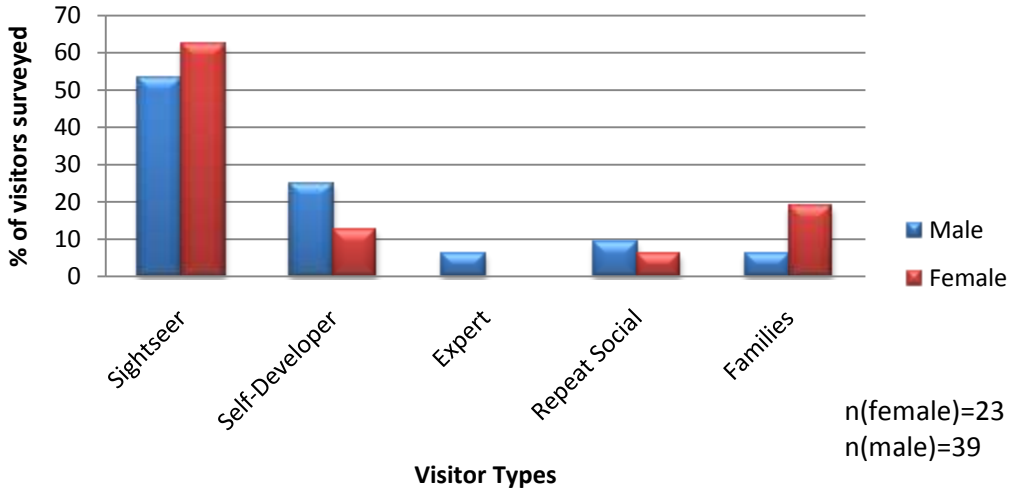


Figure 49: Visitor Types for Gallery 68

Visitors were further categorized by the type of visit they had within the gallery, by gender (see Section 4.2.2 for an explanation of the category types) as shown in Figure 50.

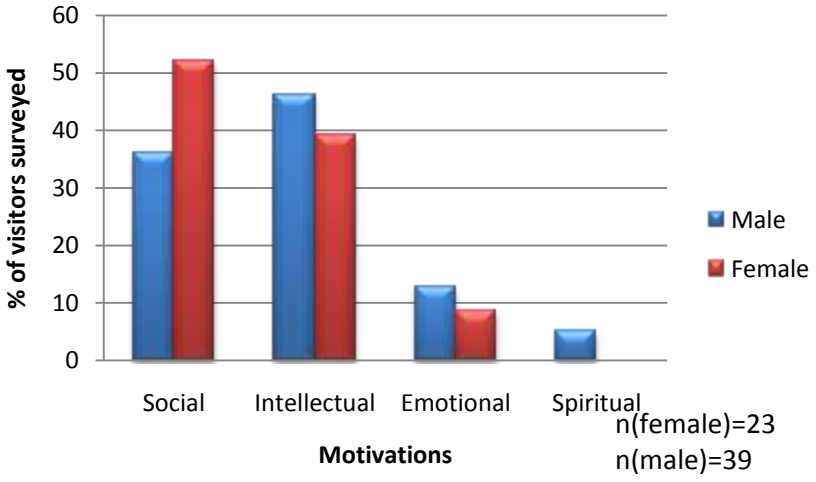


Figure 50: Type of Visit Guests had in Gallery 68

The responses to Question 16, which asked for comments and suggestions for the gallery, were highly varied. The responses were categorized and summarized in Figure 51 below. Twenty three percent of responses include not enough content, while others commented on issues with the text size throughout the room.

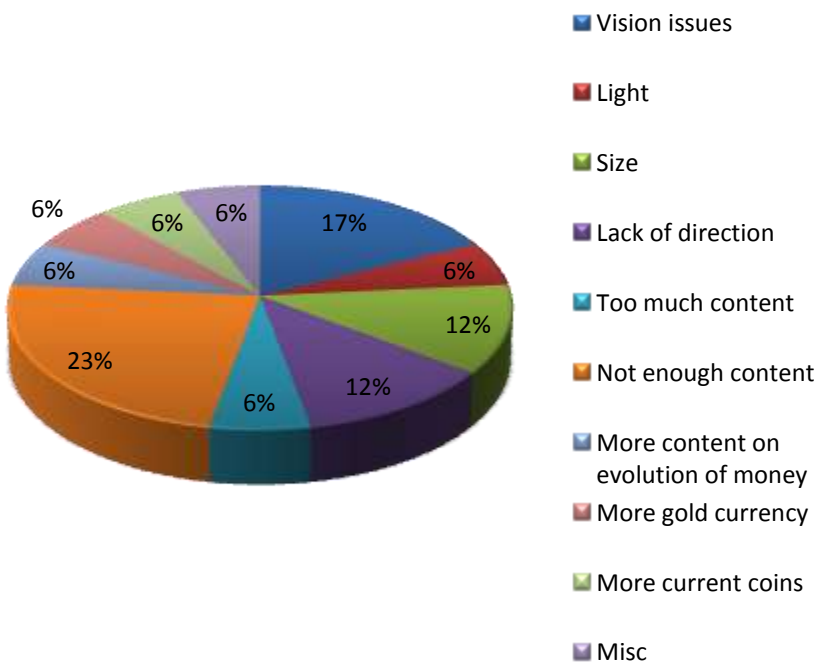


Figure 51: Suggestions for Improvement in Gallery 68 (n=17)

Visitors were also asked in Question 16 what they learned in the gallery that was new to them. The responses were categorized and summarized in Figure 52. One category of response given by 55% of respondents relates to the production of money.

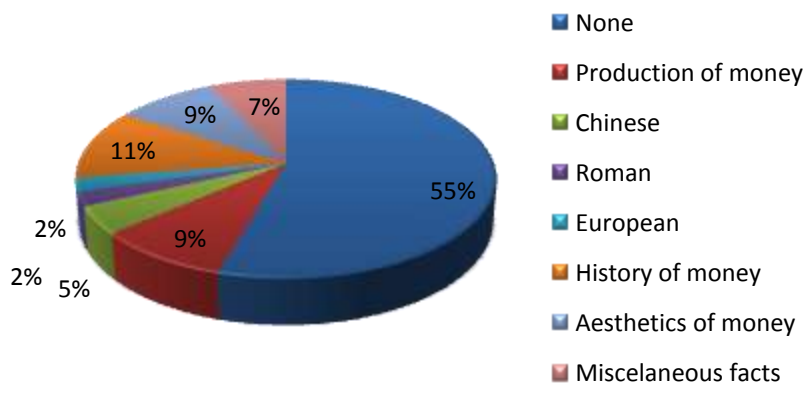


Figure 52: New Concepts Learned in Gallery 68 (n=44)

To gather a sense of which objects are particularly fascinating in Gallery 68, Question 12 of the questionnaire asks the visitor which object they found especially interesting. A summary of the responses given is shown in the Figure 53. Several guests commented that the most interesting object that they saw in the room was the old style till located in Case 13. Other popular responses included the large reducing machine in Case 14, and the oversized coins in Case 9. This would suggest that the most interesting objects in the gallery are also the largest objects in the gallery. This might in turn suggest that the least popular objects in the room are the clusters of small coins and text, such as what is found in Cases 10 and 11.

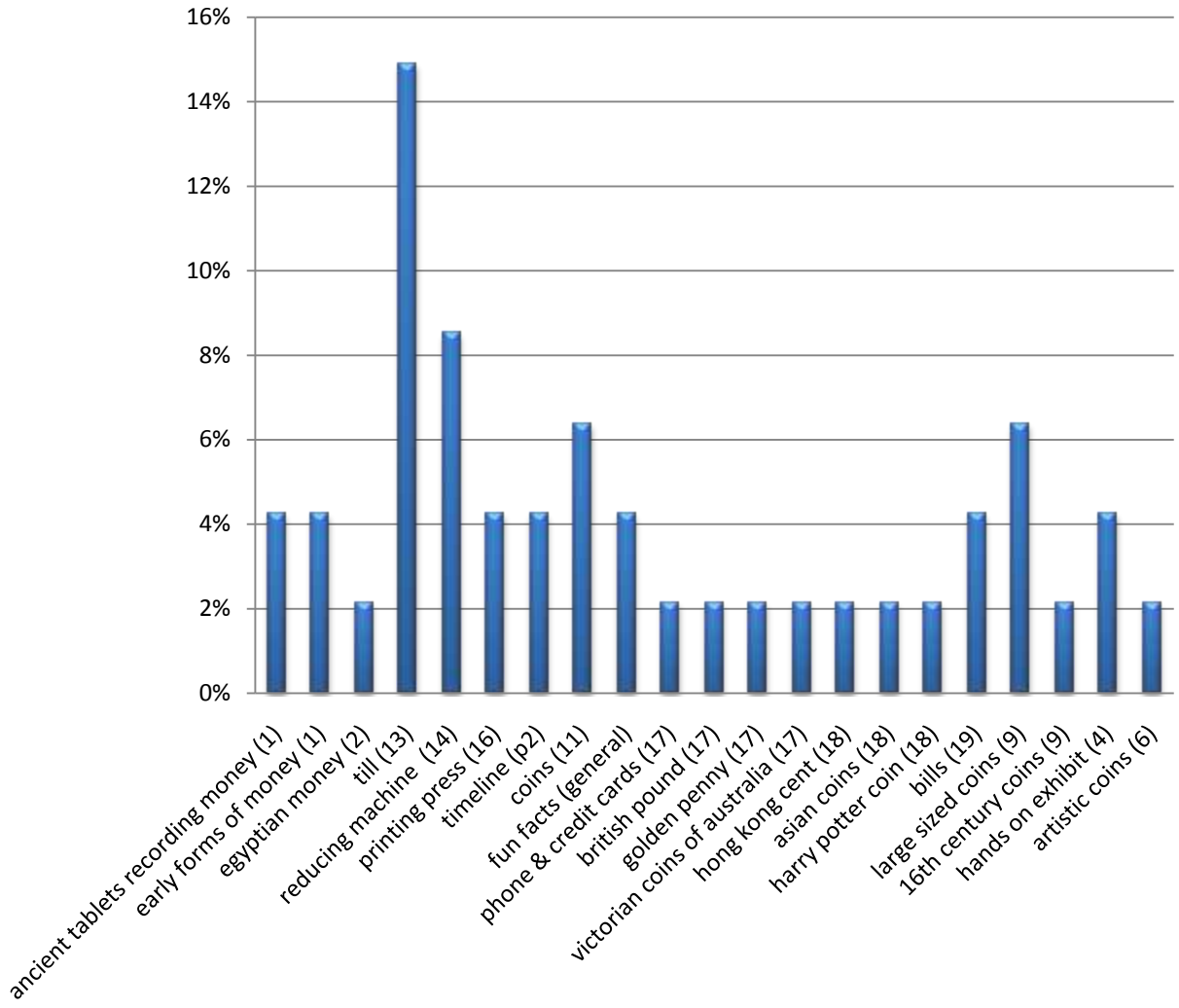


Figure 53: Attractive Objects from Gallery 68 (n=57)

4.4 Galleries 68 and 69a Compared to the Entire Museum

To compare the sample of visitors interviewed in galleries 68 and 69a to the entire museum, the following figures compare aspects of other galleries through the museum to the data collected in galleries 68 and 69a. These figures show that the data collected for galleries 68 and 69a are rather representative of the overall museum, and do not differ greatly in any aspect. This suggests that the collected data is consistent with previous surveys done by other staff. It also suggests that the types of visitors to these galleries are typical of the visitors to other

galleries in the museum. In addition, this data does not account for the size or number of cases in each gallery, therefore, the data is more illustrative than definitive.

The average dwell times for various exhibits throughout the museum vary greatly (Figure 54). The average dwell time for this sample of museum galleries is 224 seconds and the median dwell time is 184. Thus, the money gallery is rather representative of this sample of galleries.

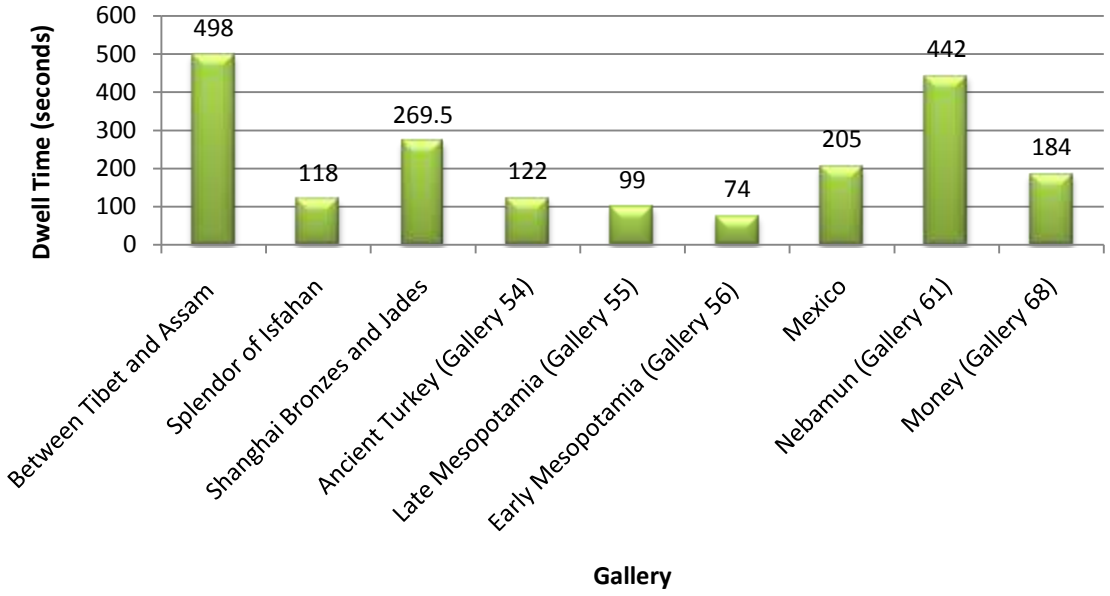


Figure 54: Average Dwell Time for Exhibits throughout the Museum

In Figure 55 the percentage of stops that guests made on average for several galleries is shown. The average percentage of stops was 27% and the median was 24%. This shows that galleries 69aand 68 are also representative of the overall museum in this respect.

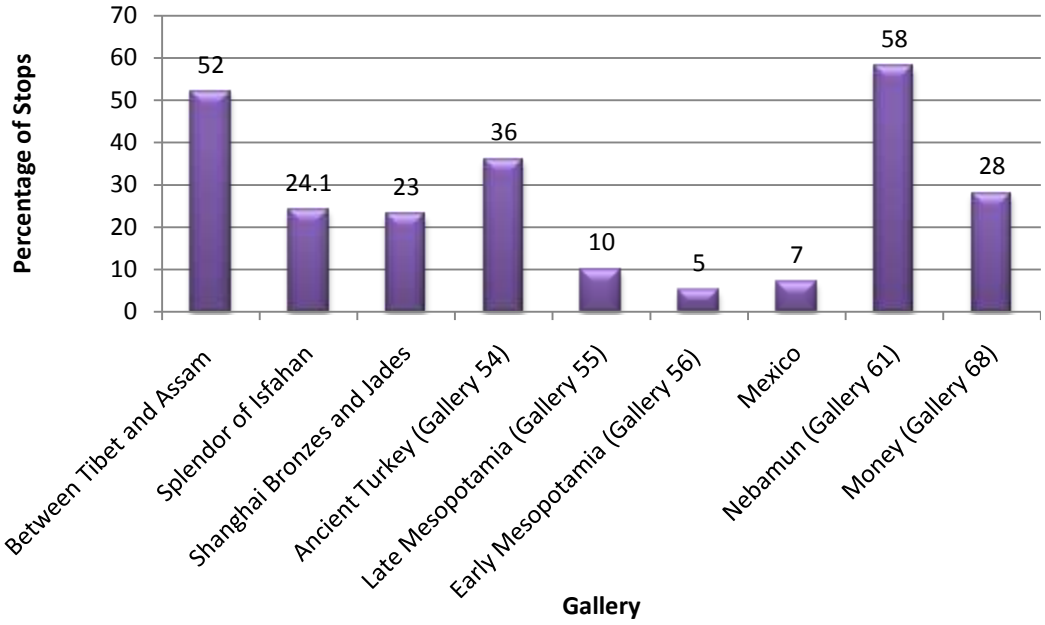


Figure 55: Average Percent of Guests who stop at Each Exhibit

The percentage of visitors who were browsers for each gallery in the museum is shown below in Figure 56. The average percentage of guests who were browsers for these galleries was 67% and the median percentage was 66%. Gallery 69a is better than the museum average, with only 57% of its visitors only engaged in browsing.

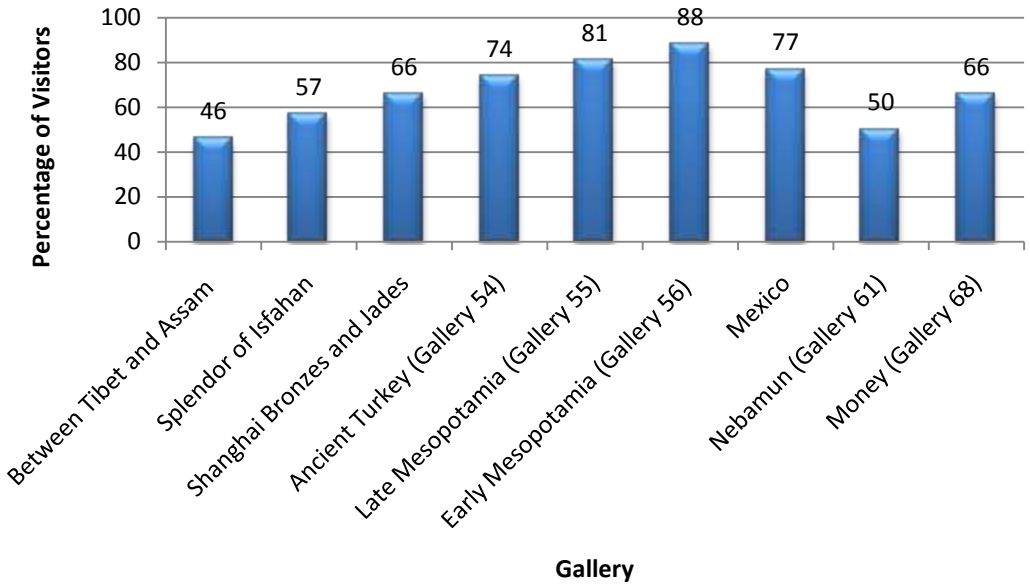


Figure 56: Percentage of Browsers

The percentage of visitors who walk through select galleries is shown in Figure 57. The average percent of guests that walk through these galleries without stopping to view any of its contents is 59% and the median is 63%. Gallery 69a has a very low walk through rate because it only has one entrance.

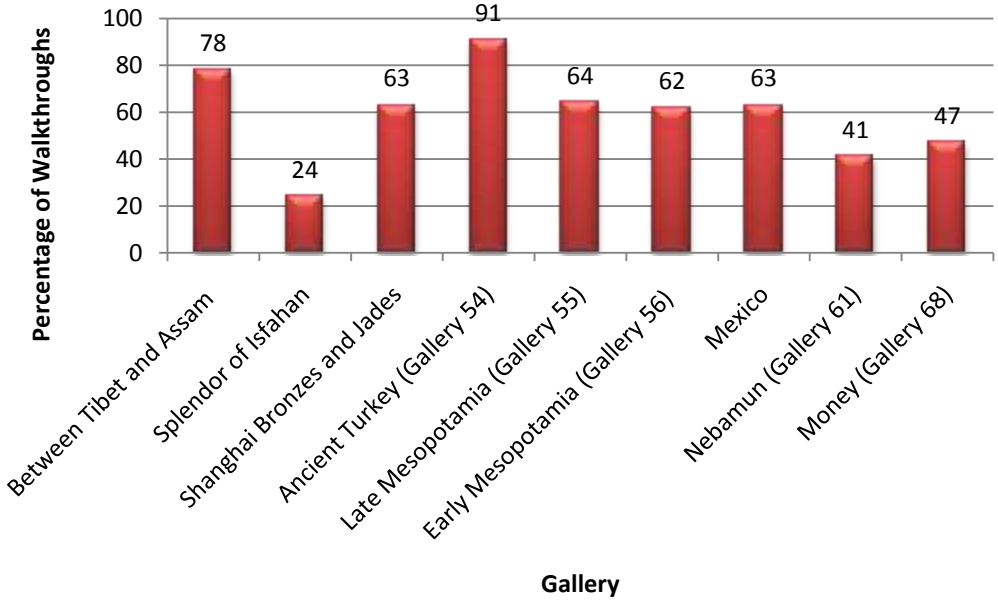


Figure 57: Percentage of Walkthroughs

The median number of stops that guests make within each gallery is shown in Figure 58. The average of this data is 6.6 stops per person. Therefore, Galleries 68 and 69a are slightly below the average, but again, this does not account for the size of each gallery, or the number of cases in each gallery.

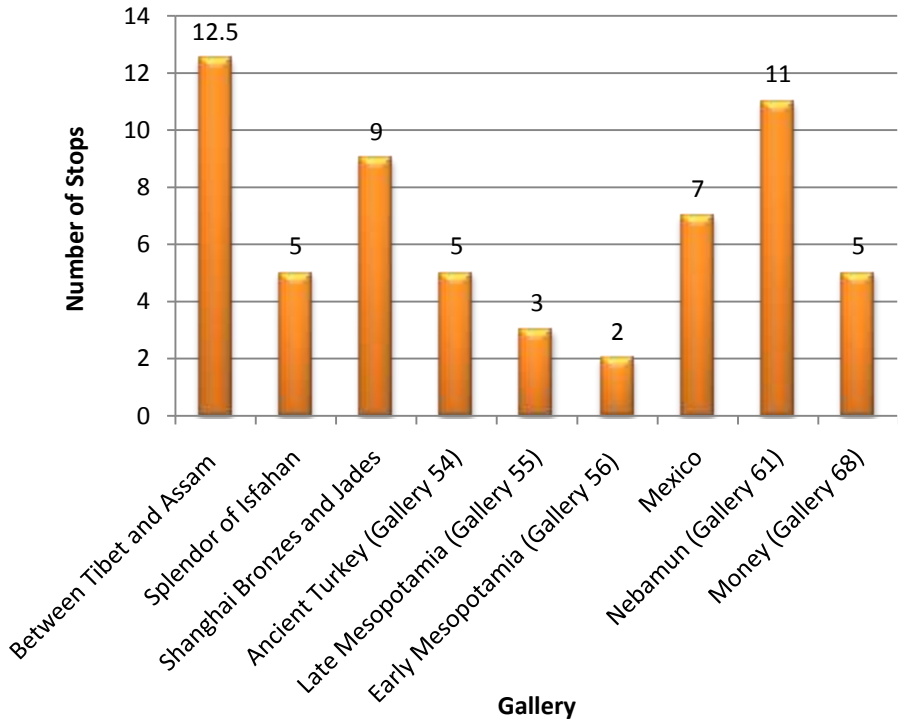


Figure 58: Median Number of Stops within Galleries per Visitor

The percent change in motivations for attending each gallery is shown in Figure 59. The desired outcome of a successful gallery is a change away from a social motivation. The decrease in social motivations is significant for Galleries 68 and 69a, but is not as large as those measured in the other galleries represented.

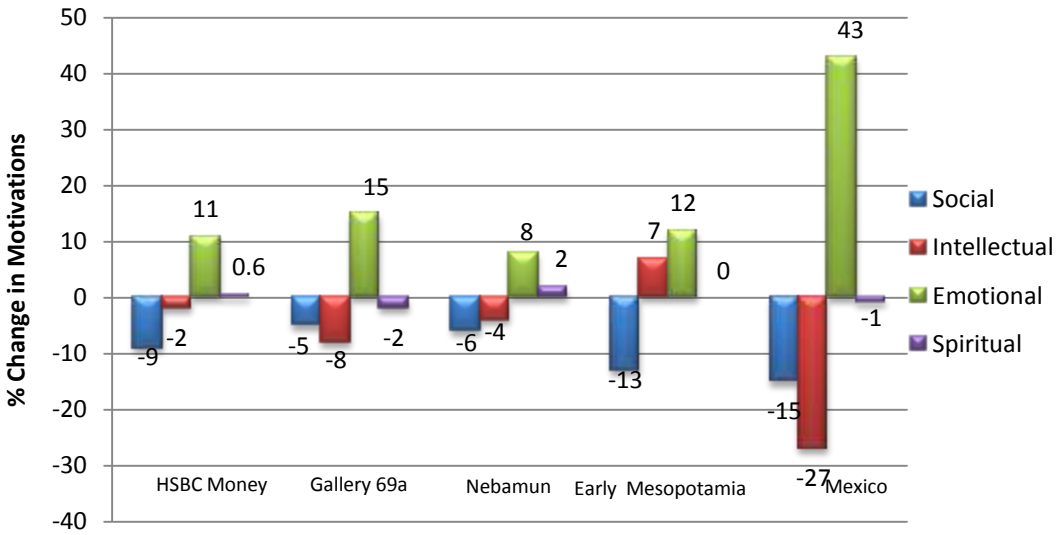


Figure 59: Percent Change in Motivations for Attending the Gallery

A summary of whether the guests stated they had expert, general or little knowledge on the subject presented in each gallery is presented in Figure 60. A very large number of survey respondents in Gallery 69a said that they had little knowledge of Iranian coins.

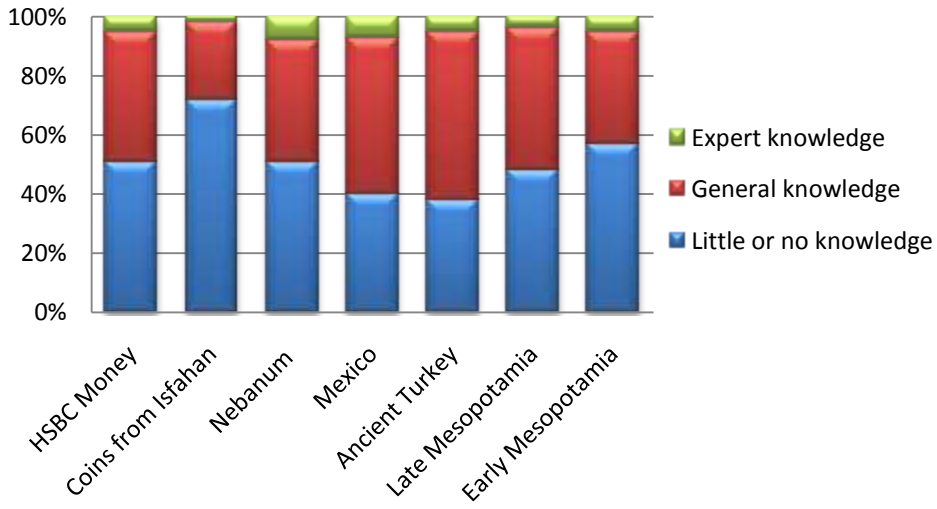


Figure 60: Visitor Level of Knowledge by Gallery

A summary of guest compositions is shown in Figure 61 for previous exhibitions in Gallery 69a. It shows that there were fewer guests visiting alone than in previous exhibitions.

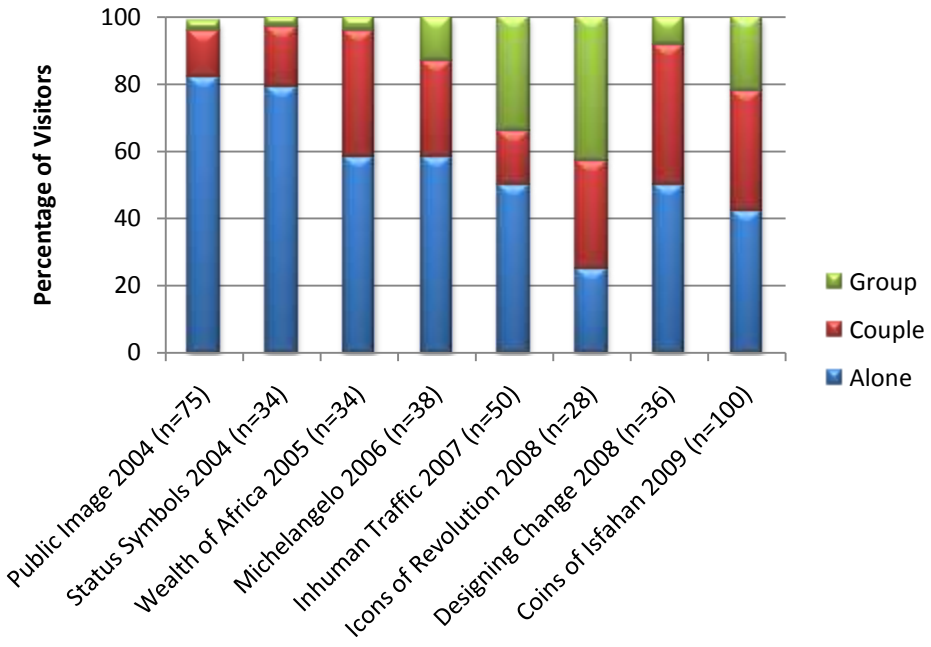


Figure 61: Guest Composition of 69a Exhibitions

The average dwell time for recent exhibitions in Gallery 69a is shown in Figure 62. The average overall dwell time across these exhibitions was 159 seconds, and the median overall dwell time for these exhibitions was 164 seconds. This would suggest that the Coins of Isfahan exhibit is more attractive than recent exhibitions in Gallery 69a have been.

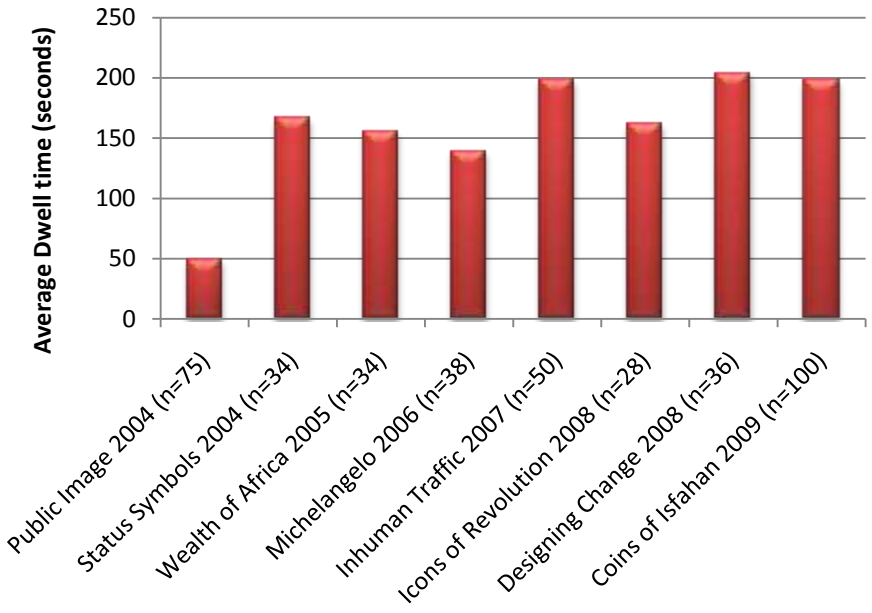


Figure 62: Average Dwell Time of 69a Exhibitions

5. Recommendations and Conclusions

5.1 People Counter

The museum's people counters are an important aid in monitoring gallery visitation, especially with regard to the temporary exhibits displayed in Gallery 69a, but all counter readings need to be calibrated to account for staff traffic and miscounting. We recommend monthly readings be taken and adjusted using the formula the group has developed, as well occasionally manually counting visitors to check the accuracy of the equation.

5.2 Gallery 69a

After completing the analysis of data gathered from Gallery 69a, the team was able to draw conclusions and create a set of recommendations to present to the British Museum. Through the use of tracking and visitor surveys, we were able to conclude that the central Case 11, located in the entrance to the gallery, has both the greatest attracting power and the greatest holding power of all cases in the room based on the average dwell time and visitor responses. Also, we can conclude from average holding power that Case 1, located on the right-hand side of the gallery, attracts many visitors as they enter the room but is unable to keep their attention for an extended period of time. We believe this to be because once a visitor enters that side of the gallery, they notice and are then drawn to Cases 2 and 3 which contain larger pictures and Iranian books on display.

Based on these conclusions, a set of recommendations can be formulated for use with future temporary exhibits in Gallery 69a. After noting the success of Case 11, future curators must continue to put eye-catching objects in the case to persuade visitors to enter and to stimulate their interest in the subject matter. One of the major complaints visitors had about Gallery 69a was its size, so it is important to make sure the number of objects placed in the gallery will not overwhelm the visitor in such a small space. In order to attract a larger number of visitors to Gallery 69a, additional advertising, both in and outside of the museum, could be useful especially when relations exist between Gallery 69a and the larger museum exhibitions.

5.3 Gallery 68

Based on the evaluation of permanent Gallery 68, the team was able to gather conclusions to back up future recommendations. As museum visitors entered Gallery 68, most people immediately moved from the entryways to the first cases lining the sides of the gallery regardless of which door they came through, as shown from observation results. From tracking and questionnaires, the team concluded that the current temporary Case 10 was not very successful based on the number of people who were remembered noticing or were observed at the case. The majority of these visitors had a Level of Engagement of L1, proving the case was unable to keep their attention based on their first glance. Also, we concluded that Cases 6, 11, and 12 drew visitors to them, but were unable to hold their focus. These cases contained mostly coins and text which could account for the number of visitors who glanced at the case but were not held by a large machine or other unique type of money.

From these conclusions, recommendations can be made in order to further improve the HSBC Money Gallery. Based on visitor flow patterns and the holding power of cases in Gallery 68, the most attractive cases are those located in the corners of the room. This is because they are the first cases visitors see when they enter Gallery 68 and because they contain objects other than only coins. It is important to make sure these cases contain a mixture of current and eye-appealing objects by Door 2, as well as a variety of ancient coins and objects by Door 1. The success of Case 10 often relies on the objects placed in it. In the future, if Case 10 is filled with eye-catching objects which do not take a long dwell time to understand, a visitor's level of engagement will increase. From the holding power and location of pinch points gained from tracking in the gallery, we believe the most favorable places to install interactive TV screens would be between Cases 8 and 2 as well as Cases 12 and 18 (See Figure 63). In the future, if the department decides to update content in Gallery 68 based on popular suggestions from the visitor survey, it is important to expand content from more popular cases and decrease the amount of text in each case while increasing font size.

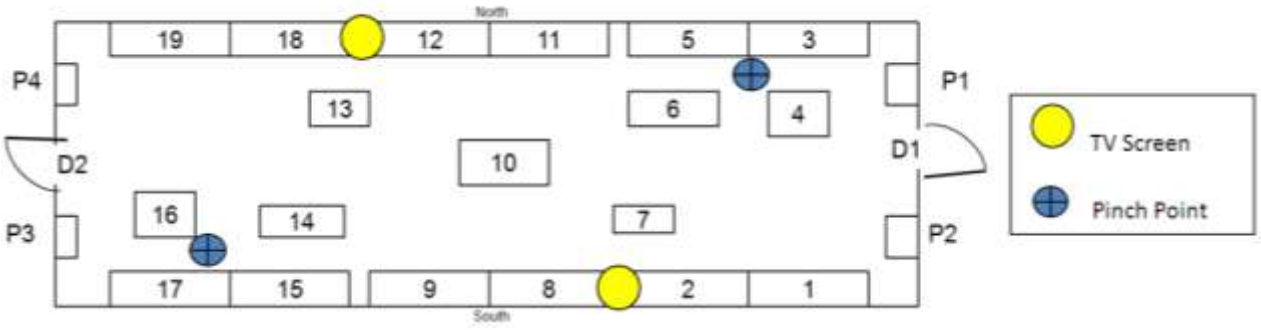


Figure 63: TV Screen Placement for Gallery 68

5.4 Galleries 69a and 68 Compared to Museum

Based on comparison data gained for the museum's Interpretation Department, our team compared data from Galleries 69a and 68 to see if they followed trends seen throughout the rest of the museum. Overall, we concluded the two galleries fell in the middle area of most categories. Gallery 69a had a much lower percentage of walkthroughs compared to other galleries, but this is due to the fact the gallery cannot be used as a direct pathway to another gallery or a stairway, such as Gallery 68. Both galleries also had a high visitor change in emotional motivation which is consistent with the rest of the museum.

5.5 Gallery and Exhibit Evaluations

After completing evaluations of both Galleries 68 and 69a, our team was able to compile recommendations we feel would be useful to future evaluations of these galleries. At the completion of this evaluation of Gallery 69a, we collected more visitor data than any of the previous Gallery 69a evaluations we had access to. In future evaluations, it will be important to get the largest sample size possible in order to get a more accurate analysis of the data. Also, we recommend a future group reevaluate the time cutoffs which correspond to the Levels of Engagement. Because of the smaller size of Gallery 69a, which led to a small average dwell time in the gallery, we would recommend the cutoffs be shortened. In Gallery 68, it might be useful to create a L5 category to differentiate between visitors who spend an extended amount of

time reading all text in a case and those who might take a few minutes looking or having a discussion about a case.

5.6 Educational Programs

The Coins and Medals Department has not recently conducted an evaluation of their educational programs and after observing a session our team was able to provide the museum with an updated evaluation methodology. Previously, the department had only had an out-teacher questionnaire, the questionnaires sent home with students and teachers were discovered to be out of date, we were able to update the questions in order to hopefully increase response rates. In order to gauge the effectiveness of the educational programs, the team recommends in the future the session instructor prepare a packet containing a set of evaluations for both the students and teacher. By enclosing in the packet a self-addressed stamped envelope, it will increase the likelihood of receiving responses from the group. Also, including incentives such as stickers for students who complete the evaluation will give the children motivation to complete their portion of the survey.

Bibliography

Alexander, E. (2007). *Museums in motion* (2nd ed.)

Allen, S., Campbell, P. B., Dierking, L. D., Flagg, B. N., Friedman, A. J., Garibay, C., et al. (undefined). *Framework for evaluating impacts of informal science education projects* No. DACS06D1421). USA: National Science Foundation. Retrieved from http://caise.insci.org/docs/Eval_Framework.pdf

Artz, S., Krasinkas, J., & Miskowiec, A. (2007). *Evaluation of engineering education programs* Worcester Polytechnic Institute.

Briggs, N. (2000). Reaching a broader audience. *The Public Historian*, *22*(3), 95-105. Retrieved from http://www.jstor.org/stable/3379581?origin=JSTOR-pdf

British Museum, T. (2009). *The British museum web site.* Retrieved 1/20, 2009, from http://www.britishmuseum.org/

Carlyle, S., Glover, T., & Klebanov, A. (2008). *The British museum: Creating a methodology for evaluating a gallery*. Worcester Polytechnic Institute:

Center for Advancement of Informal Science Education. (2008). *Center for advancement of informal science education (CAISE) web site.* Retrieved 2/15, 2009, from http://caise.insci.org/news/19/51/ISE-PI-Summit-2008---Workshops

Clark, J., Cutler, R., Sikes, J., & Toomey, K. (2005). *"Hands on history" at HM tower of London* Worcester Polytechnic Institute.

Clarke, P. (2004). *Southwest museums council museum learning initiative website* Retrieved from http://www.mlasouthwest.org.uk/mli/topicindex.htm

DeCampo, N., Hassett, H., & Olore, A. (2006). *Educational programs for children in the Charles dickens museum* Worcester Polytechnic Institute.

Diamond, Judy. (1999). *Practical Evaluation Guide: Tools for Museums and Other Informal Educational Settings.* New York: Rowman Altamira. Retrieved from http://books.google.com/books?hl=en&lr=&id=QW3yLtWsCgcC&oi=fnd&pg=PA11&dq=Practical+Evaluation+Guide:+Tools+for+Museums+and+Other+Informal+Educational+Settings&ots=QMqoMYNa3Y&sig=JDu6KCBdzgHzfdahJwnG7841k0o on 2/1/09.

Economou, Maria. (1999). The Evaluation of Museum Multimedia Applications: Lessons from Research. *Museum Management and Curatorship,* 17(2), 173-187. Retrieved from http://webmail.lesvos.aegean.gr/culturaltec/kavakli/MIS/papers/Economou_1998. pdf on 2/1/09.

Economou, Maria. *Museum Management and Curatorship,* Vol. 17, No. 2, pp. 173–187, 1998. http://webmail.lesvos.aegean.gr/culturaltec/kavakli/MIS/papers/Economou_1998.pdf on 1/29/2009.

Ellenbogen, K., Dancu, T., & Kessler, C. (2004). *Microscope imaging station summative evaluation* Institute for Learning Innovation. Retrieved from The Exploratorium database.

Falk, J. H., & Dierking, L. D. (2000). *Learning from museums: Visitor experiences and the making of meaning* (1st ed.). USA: AltaMira Press.

Friedman, A. (Ed.). (March 12, 2008). Framework for Evaluating Impacts of Informal Science Education.

Garrison, C., & Ehringhaus, M. *Formative and summative assessments in the classroom.* Retrieved 02/10, 2009, from http://www.nmsa.org/Publications/WebExclusive/Assessment/tabid/1120/Default.aspx

Generic learning outcomes graphic (2004). . London, United Kingdom: Museums, Libraries and Archives Council;. Retrieved from http://www.inspiringlearningforall.gov.uk/uploads/More%20about%20the%20GLO%27s.doc

Hein, G. E. (1991). The museum and the needs of people. Paper presented at the *Committee for Education and Cultural Action Conference,* Jerusalem Israel. Retrieved from http://www.exploratorium.edu/ifi/resources/constructivistlearning.html

Hein, G. E. (1998). *Learning in the museum (museum meanings).* London, United Kingdom & New York, NY, USA: Routledge.

Hooper-Greenhill, E. (2002). *Developing a scheme for finding evidence of the outcomes and impact of learning in museums, archives and libraries: The conceptual framework.* Leicester, UK: Research Centre for Museums and Galleries. Retrieved from http://www.le.ac.uk/museumstudies/research/Reports/LIRP%20analysis%20paper%201.doc

Hooper-Greenhill, E. (2007). *Museums and education: Purpose, pedagogy, performance*. New York NY: Taylor & Francis Ltd.

Institute of Museum and Library Services, The. (2009). *Institute of museum and library services web site.* Retrieved 2/18, 2009, from http://www.imls.gov/about/about.shtm

Lord, B., & Lord, G. D. (2001). In Lord B., Lord G. D. (Eds.), *The manual of museum exhibitions*. Walnut Creek, CA: Alta Mira Press.

"Michelangelo Exhibit Evaluation." British Museum. 2006.

Morris Hargreaves McIntyre Consultancy and Research. (2005). *Never mind the width: Feel the quality*. Worcester, UK: The Museums and Heritage Show Ltd.

Museums, Libraries and Archives Council. (2004). *Inspiring learning for all framework website.* Retrieved 2/10, 2009, from http://www.inspiringlearningforall.gov.uk/default.aspx?flash=true

National Museum Directors' Conference, The. (2008). *National museum director's conference web site.* Retrieved 2/15, 2009, from http://www.nationalmuseums.org.uk/

Paris, S. G. (2002). In Paris S. G. (Ed.), *Perspectives on object-centered learning in museums* (1st ed.). USA: Lawrence Erlbaum Associates. doi:AM8.P47 2002 069'.15-dc21

Prof., S. B., & Prof., M. B. (2007). *Diverse learning and learner diversity in informal science learning environments* National Research Council. Retrieved from http://www7.nationalacademies.or/bose/Brice%20Heath_Commissioned_Paper.pdf

Reeve, Muriel. "Status Symbols: Identity and Beliefs on Modern Badges' Exhibition Evaluation Report." British Museum. 27 February 2005.

Research Centre for Museums and Galleries, The. (2007). (Report on the evaluation of the DCMS / DCSF National / Regional Museum Partnership Programme in 2006-2007. London, UK: Research Centre for Museums and Galleries, The;. Retrieved from http://www.le.ac.uk/ms/research/Reports/DCMS2.pdf

Selma, T. (1991). Interactive media & the museum experience. Paper presented at the *Hypermedia & Interactivity in Museums*, Pittsburgh, PA. Retrieved from http://www.archimuse.com/publishing/hypermedia/hypermedia.Ch21.pdf

Systems Simulations Ltd. (2008). *The museums association web site.* Retrieved 2/19, 2009, from http://www.museumsassociation.org/

The Museums, Libraries and Archives Council. (2004). *Tabulated descriptions of GLOs types with examples.* Retrieved 2/10, 2009, from http://www.inspiringlearningforall.gov.uk/uploads/More%20about%20the%20GLO%27s.doc

The Museums, Libraries and Archives Council. (2008). *The museums, libraries and archives council web site.* Retrieved 2/10, 2009, from http://www.mla.gov.uk/

University of Leicester, T. (2009). *Research centre for museums and galleries (RCMG).* Retrieved 2/10, 2009, from http://www.le.ac.uk/ms/research/rcmg.html

Wang, Helen. "Icons of Revolution Exhibit Evaluation." British Museum. 13 August 2008.

"Wealth of Africa Exhibition Evaluation Report." British Museum. 2005.

Worcester Polytechnic Institute. (2006). *Educational Programs for Children in the Charles Dickens Museum* [Report]. Worcester, MA: Nicole Decampo, Heather Hassett, Amanda Olore.

Worcester Polytechnic Institute. (2005). *"Hands on History" at HM Tower of London.* [Report] Worcester, MA: Justin Clark, Robert Cutler, Jonathan Sikes, Kevin Toomey.

Appendix A: Department of Coins and Medals/DCM Description

British Museum/Department of Coins and Medals Description

History:

The British Museum was originally founded in June 7, 1753, after Parliament agreed to the conditions in the will of the noted physician, naturalist and avid collector, Sir Hans Sloan. The will stated that Sir Sloan's 71,000 item collection of antiquities, natural history manuscripts and herbarium was to be given to the British government in exchange for compensation of £20,000 to each of his heirs (The British Museum, The History of The British Museum, 2009).

The Museum was funded by public lottery, and originally situated in the 17th century mansion Montague House in Bloomsbury, which remains the location of the museum today. It was governed by a board of trustees directly responsible to the British Parliament. Early on the museum would undergo several expansions to its collection, with Sir Sloan's collection bolstered by that of Sir Robert Cotton, the Harleian collection of manuscripts, and King George II's Old Royal Library. In the 1880s, the museum's natural history collections were moved to the newly created Natural History Museum in South Kensington, which along with the construction of the White Wing, allowed room for an expansion of the rest of the collection. The museum opened to the public in January 15, 1795, and with the exception of closings during the first and second World Wars, has continued to operate free of charge to the attending public to the present day.

The original museum collection consisted mostly of books and manuscripts on natural history, including some antiquities like medals, prints and drawings, and was organized into the Department of Printed Books, the Department of Manuscripts, which included medals, and Department of Natural and Artificial Productions, which included everything else. The coins and medals were moved to the Department of Antiquities which was created in 1807, and finally to their own Department of Coins and Medals (DCM) in 1861. The collection expanded greatly in the 19th century to include a broader span of history and cultures.

Today, the DCM is home to one of the world's finest numismatic collections, and includes nearly 1 million objects. These range from coinage and related materials, to over 50,000 items in the collection of paper money, to commemorative art medals from the Renaissance to the present (The British Museum, History of the Collection: Coins and Medals, 2009).

Mission

From its inception, the museum was based on the principle that its collection should be freely accessible to the public, and is "grounded on the Enlightenment idea that human cultures can, despite their differences, understand one another through mutual engagement." (The British Museum, About Us, 2009) As such, according to the museum's annual report (2008), its goals can be summarized by the museum's aspirations, which are to be:

- The greatest collection representative of human cultural achievement, ancient and modern, in the world.
- A space 'not only for the 'learned and curious' but also 'for the benefit of the general public' – a centre of research and inquiry at all levels
- A collection preserved and held for the benefit of all the world, present and future, free of charge
- A forum for the expression of many different cultural perspectives
- A place to increase understanding of the cultural connections and influences linking Britain and the world.
- A place where the UK's diverse population can explore its common inheritances

The museum achieves its mission through the conservation of its collection, as well as the design and implementation of its various permanent, temporary, and traveling exhibits. Additionally the museum also conducts various educational programs, and promotes research through partnerships with both local and international institutions.

Exhibits and Programs

The museum's collection of over 7 million objects is made accessible to the public both through its exhibits and educational programs. The DCM includes only a fraction of the galleries and programs offered by the museum as a whole, yet even these alone are extensive. Of the approximately 9,000 coins, medals and banknotes on display around the museum, more than half can be found on the HSBC Money Gallery Room (Room 68 in Figure 64). The rest of the materials can be found in the other galleries listed under Figure 63 and Figure 64.

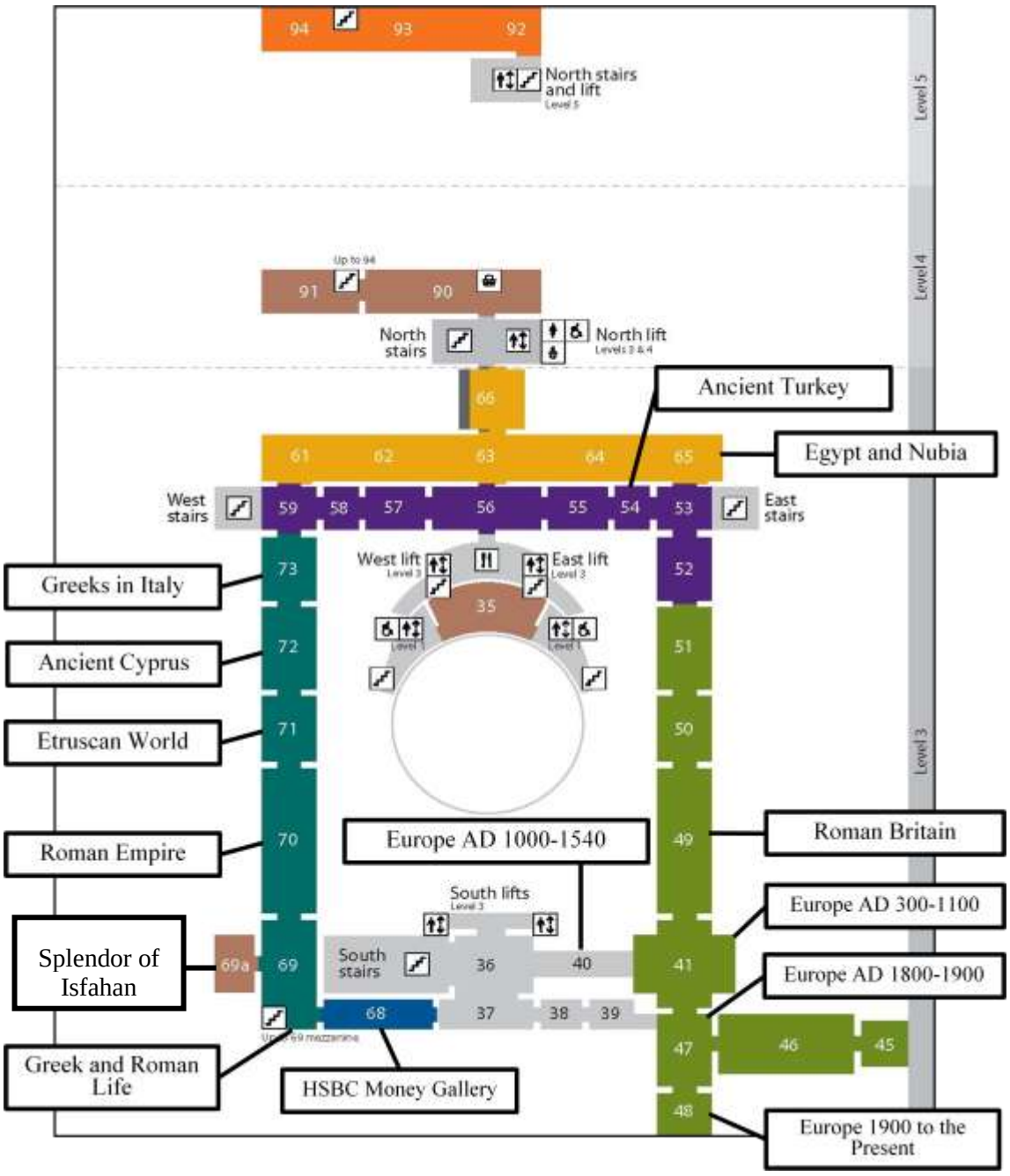


Figure 64: Floor Plan of Upper Galleries

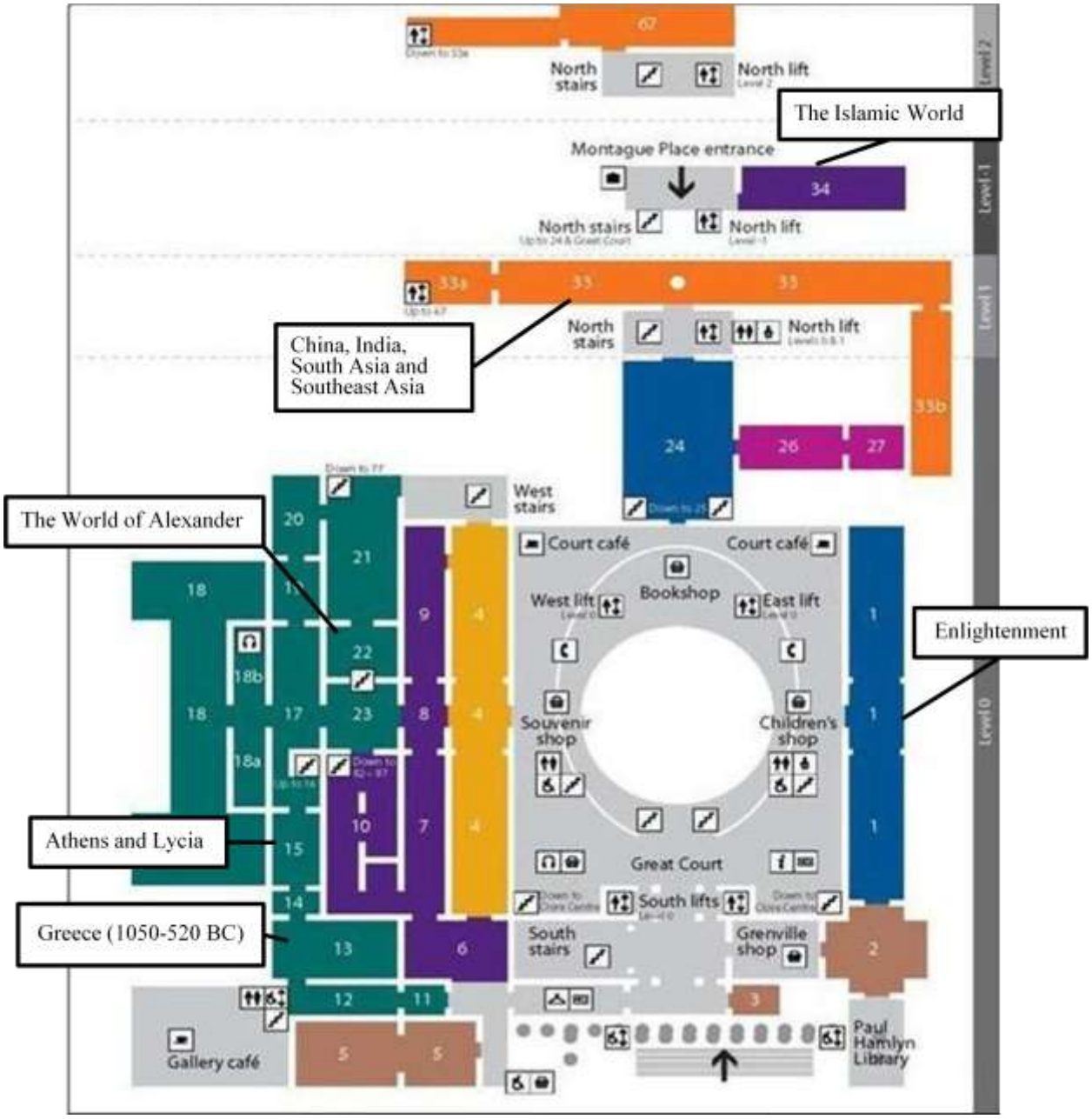


Figure 65: Floor Plan of Lower Galleries

In following its last two goals, the museum is funding research worldwide, and providing educational support both locally and internationally. The World Collections Programme in particular, through funding from the UK Department of Culture, Media, and Sport, has been allocated £1 million per year for three years beginning in 2007. The program aims to build closer bilateral relationships with institutions overseas (The British Museum, Annual Report 2007-2008, 2008).

In promoting its status as a center of learning, the museum also hosts many on and off site educational programs, which it offers to both international and local students. According to the British Museum Review 2007-2008, "In 2007 and 2008, a total of 200,000 school pupils visited the BM in booked groups, with about a quarter of those coming from overseas." Each museum department also offers its own educational programs. The Department of Coins and Medals for instance, offers free, weekly educational sessions which cover discussions of coinage from Africa to Ancient Greece. These sessions even give students the opportunity to handle certain artifacts for themselves.

Status and Organizational Structure

The British Museum is a non-departmental public body (NDPB) which receives sponsorship from the Department for Culture, Media and Sport (DCMS) currently through a three year funding agreement. The organization is an exempt charity under the Charities Act 1993. As an NDPB, the organization must also comply with the terms of the Management Statement and Financial Memorandum mandated by the DCMS.

The governing body of the museum is the Board of Trustees, whose members are appointed for a period which cannot exceed 10 years. The Board is composed of 25 members, 15 of which are appointed by the Prime Minister, 1 by the Queen (or King), 5 by the Museum's acting Trustees and 1 each by the Royal Academy, British Academy, The Society of Antiquaries and the Royal Society.

The Board Director is one of the Trustees appointed by other Trustees. He is responsible for the general administration of the institution, and reports directly to the British Government. The current Director is Neil MacGregor, who has been serving since 2002.

Internally, the museum is comprised of 13 collections management departments and 11 other functional support departments. A diagram of the department system is provided in Figure 66.

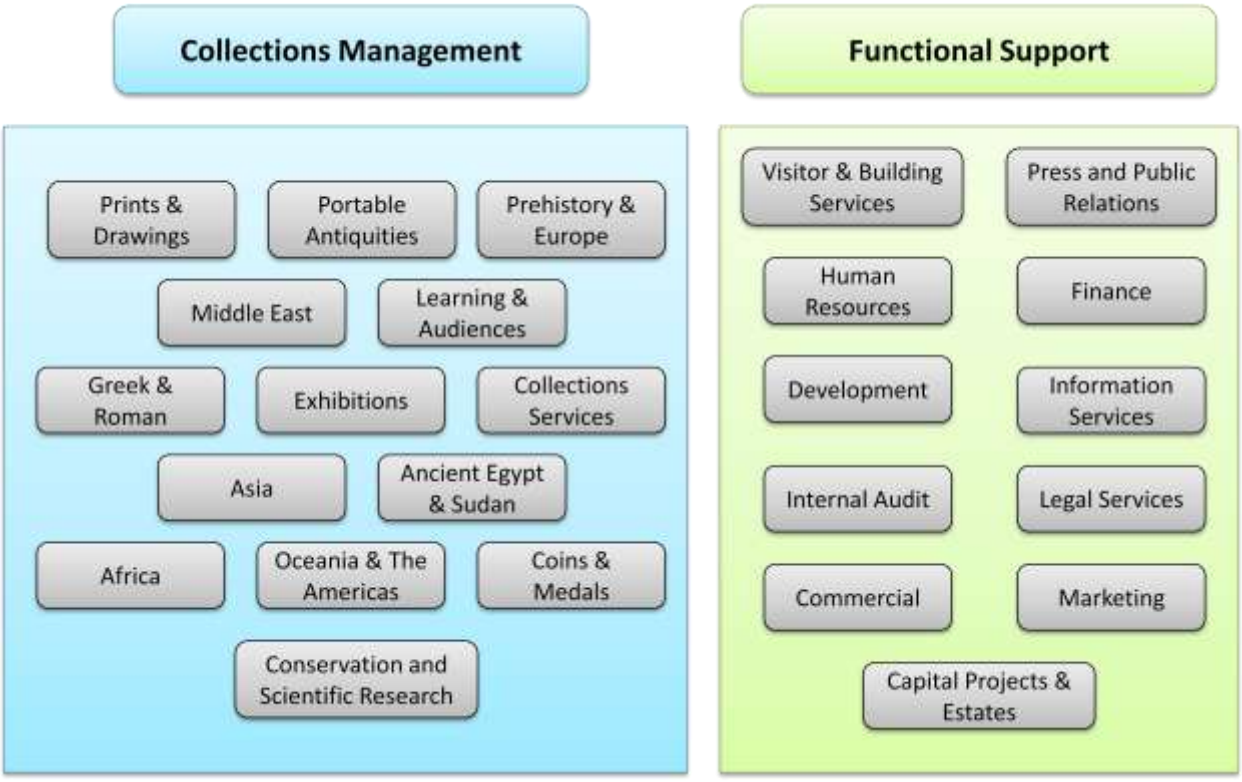


Figure 66: Structure of the British Museum Departments

The British Museum Company Ltd, with its subsidiary British Museum Ventures Ltd, is a company fully owned by the Trustees and is responsible for managing retailing, off-site trading, and publishing activities for the museum. As of April 2008 it also assumed responsibility of handling hospitality from the British Museum Great Court Ltd, another company owned by the board which handles conferences, education, and other income generating activities.

The museum is also supported by two "friends" associations with the American Friends of the British Museum, and the British Museum Friends, which are both charitable trusts which aid the Museum in expanding the collection and raising funds.

The Department of Coins and Medals employs a portion of the 900 strong workforce that maintains and operates the museum itself. The senior staff for this department includes 11 curators of the various sub-classifications of the collection, and a Keeper of Coins and Medals, who is the head of the department. (The British Museum, Annual Report, 2008) The current curators as of 2009, along with their positions are listed in Figure 67.

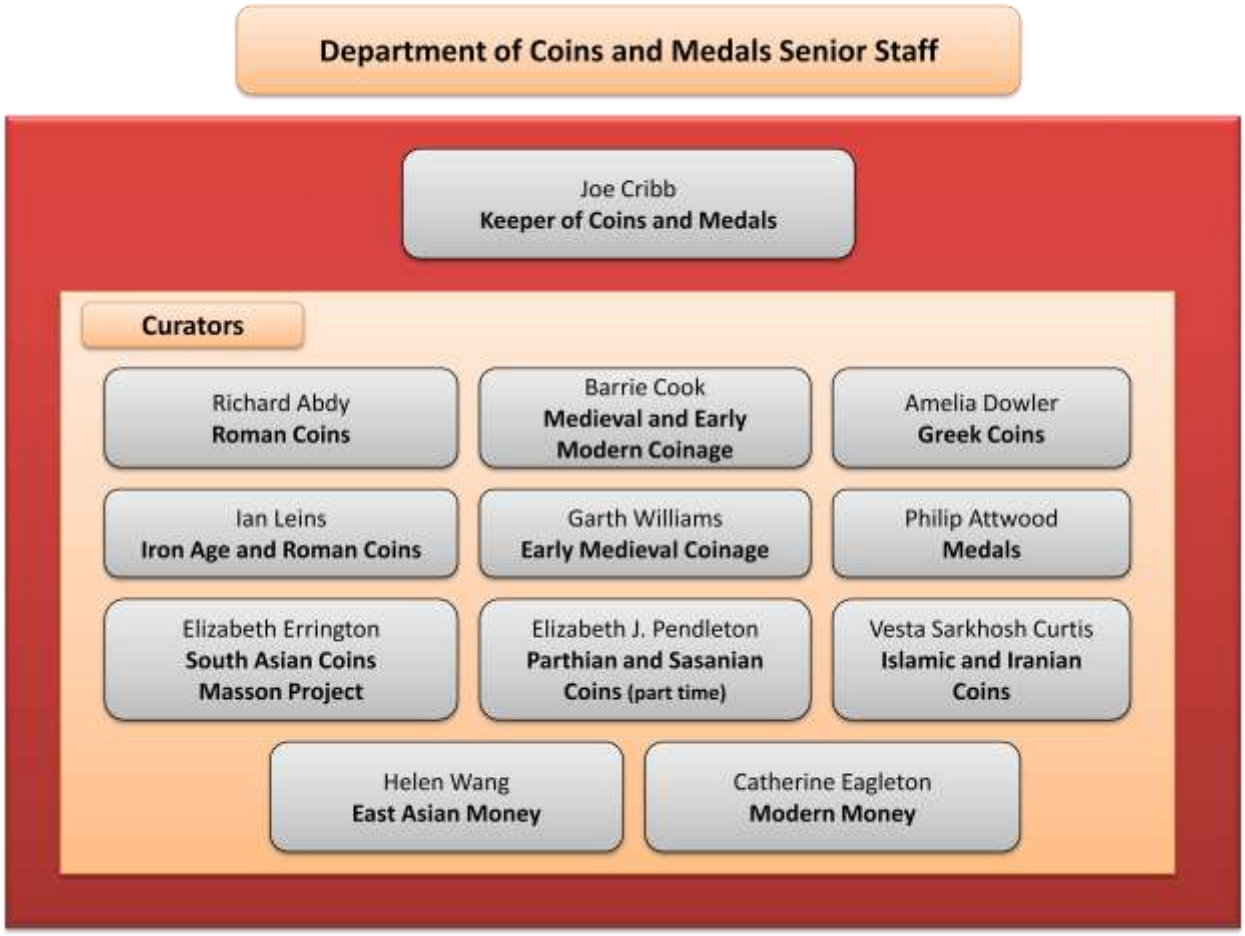


Figure 67: Staff of the Department of Coins and Medals

Size and Reach

According to its annual Report and Accounts (2008), the British Museum employed 1,116 people from 2007 to 2008, with 80% of its employees involved in care, research and conservation of the Museum, or public access and education. Additionally, some 350 volunteers freely contribute time to support the museum's activities, doing work from general administration or library duties to recording vital collection information.

Total incoming funding for 2007-2008 was £74,447,000, with £41,648,000 being granted from the government, £4,368,000 coming from donations and legacies, £15,138,000 from commercial trading activities, £1,766,000 from investment income, and £11,527 from incoming resources from charitable activities. The total funds for the museum in terms of total assets were

£587,381,000, showing that it is certainly a financially powerful organization (The British Museum, Annual Report, 2008).

As a museum self proclaimed to be "of the world, for the world" the organization has extensive global reach (The British Museum, Annual Report, 2008, p. 3). In 2007-2008, a total of 6,049,000 people visited the museum, and 13,507,000 unique users visited the museum website (The British Museum, Annual Report, 2008). Real and virtual visits were substantially higher in 2007-2008 than in previous years (see Figures 68 and 69), and far exceeded staff projections.

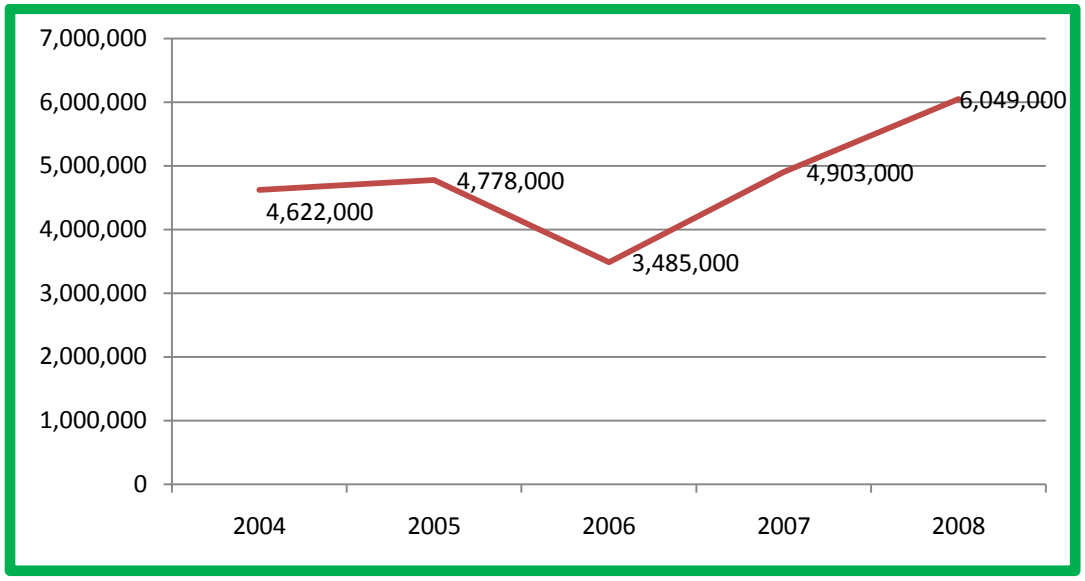


Figure 68: Total Number of Physical Visits to the Museum from 2003-2008

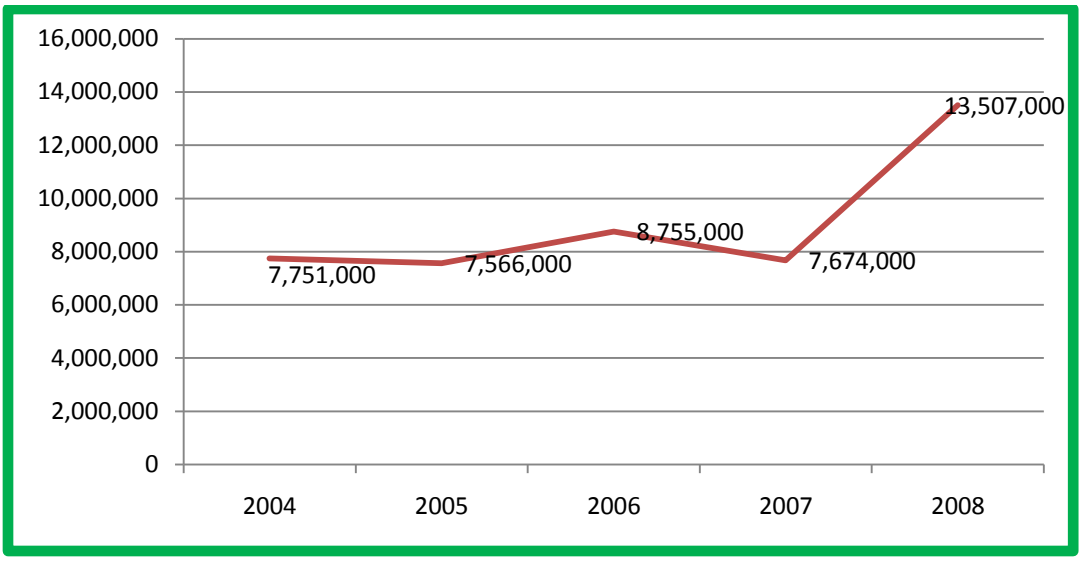
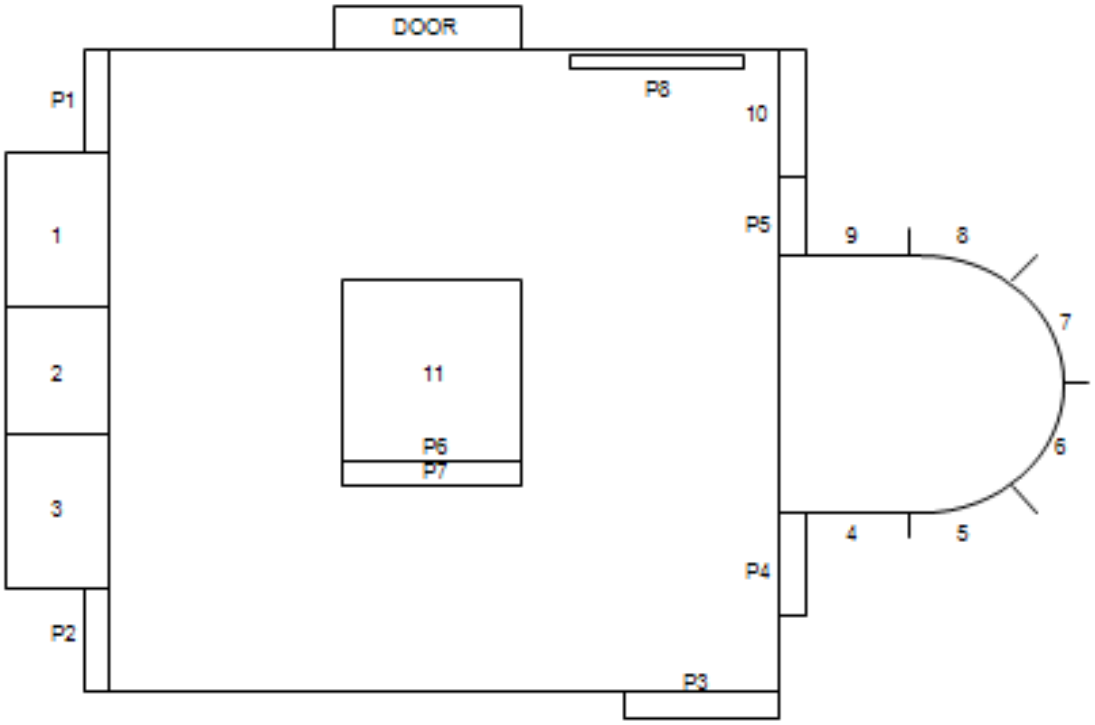


Figure 69: Number of Unique Users Visiting the British Museum Website from 2003-2008

These unexpected results are a consequence of several factors. The museum's sampling methods for obtaining visitor statistics changed at the end of 2005-2006 to use weekly rather than biannual sampling, which improved the accuracy of the results (The British Museum, Annual Report, 2008). Additionally, the success of the First Emperor: China's Terracotta Army exhibition in the 2007-2008 period resulted in a significant increase of visitors from London and the rest of the UK. The exhibition set records for advance ticket sales, with over 850,000 visitors seeing the display, the largest attendance for an exhibition since the Tutankhamen display of 1972 (The British Museum, Review 2007-2008). On the whole, visits by children and adults from impoverished areas increased in proportion with the total number of museum visits (The British Museum, Annual Report, 2008). The increase in web visits is most likely attributable to the redesign of the British Museum website in 2007-2008, which included an online booking service made available during the First Emperor exhibition (The British Museum, Annual Report, 2008).

Appendix B: Tracking Sheet for Gallery 69a



Walkthroughs

#	D	T	G C	D T

#

☐ Refusal to answer

Reason:

☐ Lang ☐ Time

Other: _____

#	Date	Time	Group comp	Dwell time

Overall viewing strategy:

Viewing strategy
B=Browser
F=Follower
S=Searcher
R=Researcher

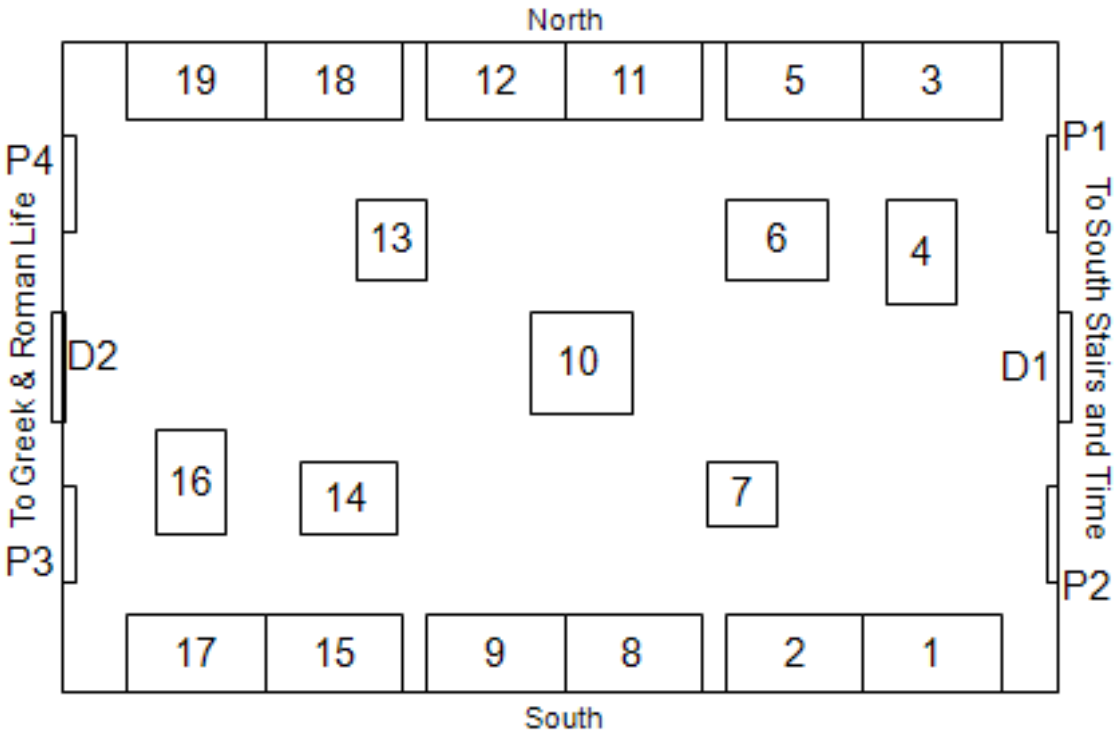
Depth of Engagement:
O=Orientation
E=Exploration
D=Discovery
I=Immersion

D=Date
T=Time
GC=Group comp
DT=Dwell time

D=Discussion
P=Photograph

Level of engagement
L1=Glance
L2=10 secs
L3=10-40 secs
L4=40 secs+

Appendix C: Tracking Sheet for Gallery 68



Walkthroughs

#

#	D	T	G C	D T

☐ Refusal to answer

Reason:

☐ Lang ☐ Time

Other: _____

#	Date	Time	Group comp	Dwell time

Overall viewing strategy:

Viewing strategy
B=Browser
F=Follower
S=Searcher
R=Researcher

Depth of Engagement
O = Orientation
E = Exploration
D = Discovery
I = Immersion

D=Date
T=Time
GC=Group comp
DT=Dwell time

D=Discussion
P=Photograph
A=Audio tour engaged

Level of engagement
L1=Glance
L2=10 secs
L3=10-40 secs
L4=40 secs+

Appendix D: Gallery 69a Questionnaire Survey

Gallery 69a: The Splendor of Isfahan Coins from Iran **Number:**

Hi, my name is …… and I'm working on behalf of the British Museum. We are looking to find out more about our visitors and what you think about the museum. May I have a few minutes of your time for a brief interview?

Thank you. Please do not feel pressured to answer in any particular way. We will not be offended by any negative responses.

1. **How long have you been in the museum today?** Hours……Minutes……
2. **How long do you intend to stay in the museum today? …….**
3. **Is this your first visit to The British Museum?** ☐Yes ☐No **(if yes, go to Q6)**
4. If not their first time: **How long ago was your last visit?**
    1. ☐ 12 months ago or less (**Continue**)
    2. ☐Between one and two years ago (**Skip to Q6**)
    3. ☐Between two and five years ago (**Skip to Q6**)
    4. ☐More than five years ago (**Skip to Q6**)
5. **Including today, how many times have you visited in the past 12 months?**.....
6. **What was your reason for coming to the museum today?** ***(Show Card A)***
    1. ☐ To see a specific gallery or exhibit (If so which)……..
    2. ☐A general visit to the museum
    3. ☐Attend a talk, tour, or special event
    4. ☐To visit the shop
    5. ☐To visit the café
    6. ☐To meet friends
    7. ☐Other……
7. **How would you best describe your level of knowledge of the subjects covered in gallery 69a, Coins from Iran?**
    1. ☐Expert knowledge
    2. ☐General knowledge **(Skip to Q9)**
    3. ☐Little or no knowledge **(Skip to Q9)**
8. **If expert knowledge, in which area would you consider yourself an expert?**
   ……
9. **I'm going to list some reasons for attending The British Museum, have a look down the list and say which apply to you.** Tick all that apply. . .(Show card B)
    1. ☐I am drawn to interesting buildings
    2. ☐It is one of the major attractions in London
    3. ☐It is an enjoyable way to pass the time
    4. ☐It is a nice place to spend time with friends and Family
    5. ☐To encourage children's interest in history
    6. ☐To improve my own knowledge
    7. ☐I have a personal interest in the subject
    8. ☐I have an academic/professional interest in the subject
    9. ☐To get a better understanding of other people/cultures
    10. ☐To be reminded of what life was like when I was younger
    11. ☐To experience what the past was like
    12. ☐For a strong sense of personal connection or identity
    13. ☐To have an emotionally moving experience
    14. ☐To see fascinating, awe-inspiring things

15. ☐To see beautiful things in an attractive setting
16. ☐To stimulate my own creativity
17. ☐For peaceful, quiet contemplation

10. Which of those would you say is your main reason for visiting today?
.....

I'm going to ask you a few questions about the Gallery 69a you just visited. To speed things, up I'm going to record your answers on a Dictaphone and then write them down later.

11. Did you intend to visit this gallery? ☐ Or did you just wander in? ☐
12. Of all the objects you saw, did any stand out/catch your eye? What was it? Is there any reason you favoured this object? (Dictaphone)
13. Did you stop/notice the central case from outside? (Dictaphone)
14. What impression of Iran did you get from the gallery? Maybe 5 words or associations that come to mind? (Dictaphone)
15. After spending time in the gallery, what would you say you got out of the experience? (Show Card C) (Prompt: related to motivations for coming to the Museum)
1. ☐ Found an enjoyable way to pass the time
2. ☐ Spent an enjoyable time with friends and family
3. ☐ Encouraged my children's interest in history
4. ☐ Improved my knowledge of Iranian coins
5. ☐ Now have a personal interest in the subject
6. ☐ Gained a better understanding of other people/cultures
7. ☐ Experienced what the past was like
8. ☐ Felt a strong sense of personal connection or identity
9. ☐ Had an emotionally moving experience
10. ☐ Saw fascinating, awe-inspiring things
11. ☐ Saw beautiful things in an attractive setting
12. ☐ Stimulated my own creativity
13. ☐ Found a place for peaceful, quiet contemplation
14. ☐ Think that this gallery is one of the main attractions in the Museum

16. Do you have any other comments about the gallery or displays here? Any suggested improvements?*(Dictaphone)*

I would now like to ask some questions about you. These are strictly for classification purposes and your name will not be recorded.

17. What is your first language? ……
18. In which country do you currently live? .....
19. Who are you here with? *(show card D)*
1. ☐Alone
2. ☐Children
3. ☐Adults
4. ☐School Party

20. What age group do you fall into? *(show card E)*

1. 0-7 years	**2.** 8-11 years	**3.** 12-14 years	**4.** 15-16 years
5. 17-19 years	**6.** 20-24 years	7. 25-34 years	8. 35-44 years
9. 45-54 years	10. 55-65 years	**11.** 65+ years	**12.** Prefer not to say

22. ☐**Male** ☐**Female**.

Appendix E: Gallery 68 Questionnaire Survey

Gallery 68: Money **Number:**

Hi, my name is …… and I'm working on behalf of the British Museum. We are looking to find out more about our visitors and what you think about the museum. May I have a few minutes of your time for a brief interview?

Thank you. Please do not feel pressured to answer in any particular way. We will not be offended by any negative responses.

1. **How long have you been in the museum today?** Hours……Minutes……
2. **How long do you intend to stay in the museum today? ……**
3. **Is this your first visit to The British Museum?** ☐Yes **(skip to Q6)** ☐No
4. If not their first time: **How long ago was your last visit?**
    1. ☐12 months ago or less (**Continue**)
    2. ☐Between one and two years ago (**Skip to Q6**)
    3. ☐Between two and five years ago (**Skip to Q6**)
    4. ☐More than five years ago (**Skip to Q6**)
5. **Including today, how many times have you visited in the past 12 months?**.....
6. **What was your reason for coming to the museum today?** ***(Show Card A)***
    1. ☐ To see a specific gallery or exhibit (If so which)……..
    2. ☐A general visit to the museum
    3. ☐Attend a talk, tour, or special event
    4. ☐To visit the shop
    5. ☐To visit the café
    6. ☐To meet friends
    7. ☐Other……
7. **How would you best describe your level of knowledge of the subjects covered in gallery 68, Money?**
    1. ☐Expert knowledge
    2. ☐General knowledge
    3. ☐Little or no knowledge
8. **If expert knowledge, in which area would you consider yourself an expert?** ……
9. **I'm going to list some reasons for attending The British Museum, have a look down the list and say which apply to you.** Tick all that apply. . .(Show card B)
    1. ☐I am drawn to interesting buildings
    2. ☐It is one of the major attractions in London
    3. ☐It is an enjoyable way to pass the time
    4. ☐It is a nice place to spend time with friends and Family
    5. ☐To encourage children's interest in history
    6. ☐To improve my own knowledge
    7. ☐I have a personal interest in the subject
    8. ☐I have an academic/professional interest in the subject
    9. ☐To get a better understanding of other people/cultures
    10. ☐To be reminded of what life was like when I was younger
    11. ☐To experience what the past was like
    12. ☐For a strong sense of personal connection or identity
    13. ☐To have an emotionally moving experience
    14. ☐To see fascinating, awe-inspiring things

15. ☐To see beautiful things in an attractive setting
16. ☐To stimulate my own creativity
17. ☐For peaceful, quiet contemplation

10. Which of those would you say is your main reason for visiting today?
.....

I'm going to ask you a few questions about the Room 68 you just visited. To speed things, up I'm going to record your answers on a Dictaphone and then write them down later.

11. Did you intend to visit this gallery? ☐ Or did you just wander in? ☐
12. Of all the objects you saw, did any stand out/catch your eye? What was it? Is there any reason you favoured this object? (Dictaphone)
13. Did you stop/notice case 10 in the middle of the gallery? (Dictaphone) If yes, **what was it that you noticed?** (Dictaphone)
14. Was there anything new that you discovered in this gallery? (Dictaphone)
15. After spending time in the gallery, what would you say you got out of the experience? (Show Card C) (Prompt: related to motivations for coming to the Museum)
1. ☐ Found an enjoyable way to pass the time
2. ☐ Spent an enjoyable time with friends and family
3. ☐ Encouraged my children's interest in history
4. ☐ Improved my knowledge of money
5. ☐ Now have a personal interest in the subject
6. ☐ Gained a better understanding of other people/cultures
7. ☐ Experienced what the past was like
8. ☐ Felt a strong sense of personal connection or identity
9. ☐ Had an emotionally moving experience
10. ☐ Saw fascinating, awe-inspiring things
11. ☐ Saw beautiful things in an attractive setting
12. ☐ Stimulated my own creativity
13. ☐ Found a place for peaceful, quiet contemplation
14. ☐ Think that this gallery is one of the main attractions in the Museum

16. Do you have any other comments about the gallery or displays here? Any suggested improvements?*(Dictaphone)*

I would now like to ask some questions about you. These are strictly for classification purposes and your name will not be recorded.

17. What is your first language? ……
18. In which country do you currently live? .....
19. Who are you here with? *(show card D)*
1. ☐Alone
2. ☐Children
3. ☐Adults
4. ☐School Party

20. What age group do you fall into? *(show card E)*

1. 0-7 years	**2.** 8-11 years	**3.** 12-14 years	**4.** 15-16 years
5. 17-19 years	**6.** 20-24 years	7. 25-34 years	8. 35-44 years
9. 45-54 years	10. 55-65 years	**11.** 65+ years	**12.** Prefer not to say

22. ☐Male ☐Female

Appendix F: Student Evaluation Questionnaire

THE BRITISH MUSEUM

The Department of Coins and Medals

Educational Session on **British Roman Coins** *(change for each session)* on *22/4/09*

Student Questionnaire

1. Did you like your visit to the British Museum?

   Yes No

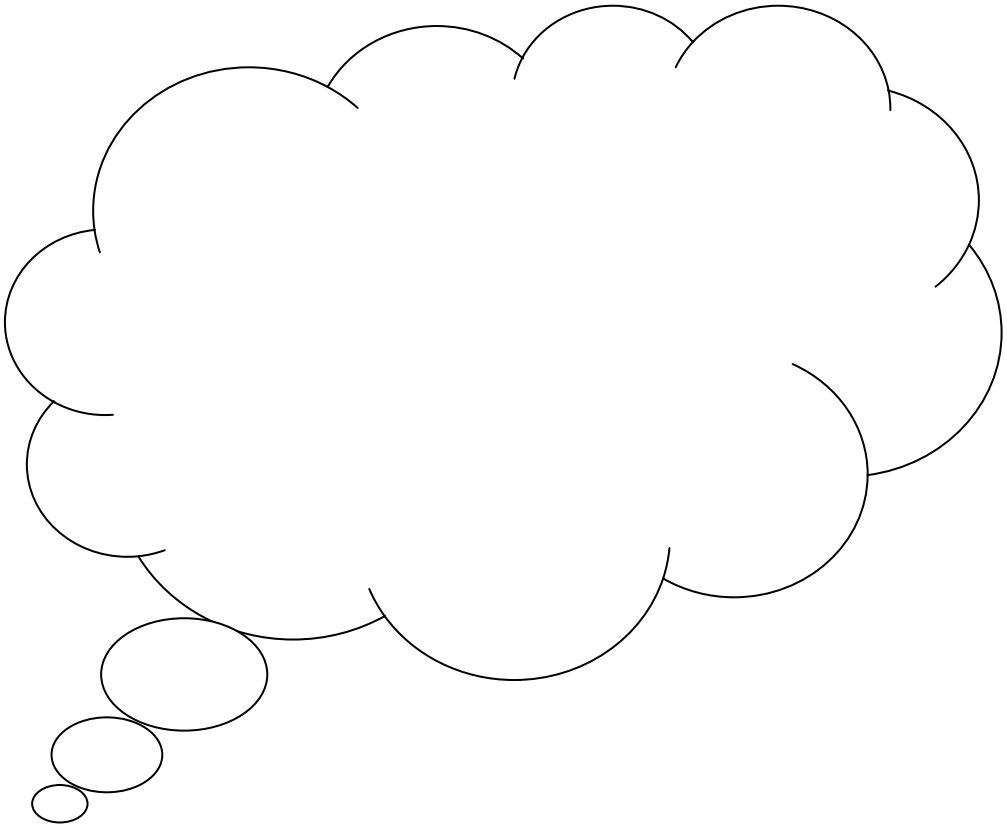
2. Did you like the school program at the museum?

   Yes No

3. What do you think of the old coins that you saw?

   I liked them. I did not care. I did not like them.

4. Please draw a picture of what you liked most at the museum.



Appendix G: Teacher Evaluation Questionnaire

THE BRITISH MUSEUM

Schools Programme Teacher Evaluation Form

Educational Session on **British Roman Coins** *(change for each session)* on *22/4/09*

We are committed to improving the quality and value of our educational programmes. We rely on evaluation to help us improve our provision. Please take a few minutes to complete this evaluation form. If you wish to comment on any of your answers or make general comments, please use the space at the end of this form, especially if you have given any low ratings.

Please rate the following aspects of your visit, crossing each box that represents your rating.

1.

	Excellent	Good	OK	Not Good	Poor
Booking process					
Objects and other resources used					
Audio-visual resources					
Enthusiasm and manner of the session teacher					
Quality of teaching/presentation					

2.

	Very well	Well	OK	Not well	Not at all
How well did the session support the work you are doing at school?					
How well did the session support the purpose of your visit to the Museum?					
How well did the session help your students to develop their knowledge and understanding of this topic?					
How well did the session engage your students' interest and enthusiasm?					
If you had students with special needs in your group, how well were they able to benefit from the session?					

3.

How well do you think the session encouraged the following in your students:	Very well	Well	OK	Not well	Not at all
Observation?					
Speaking and listening?					
Collaboration?					
Analytical and critical thinking?					
Creative thinking?					
Practical and motor skills?					
Observation?					
Speaking and listening?					

4. Which part of the session was the most/least useful and why?

5. When you booked, were you sent the Support Notes for Teachers for the session? Yes / No

a. If yes, did you use any of the pre-session ideas? Yes / No
b. Do you plan to use any of the follow up ideas? Yes / No

6. How did you learn about this session and when it was running?

1. ☐I have been to a previous session.
2. ☐I downloaded a brochure from the British Museum web site.
3. ☐I visited the Schools and Behind the Scenes page from the British Museum web site.
4. ☐It was recommended to me by word of mouth.
5. ☐Other. If you found out about it in a way not listed here.

7. Is this your first time visiting the British Museum with a school group? Yes / No

If no, when was your last visit?

a. ☐12 months ago or less (**Continue**)
b. ☐Between one and two years ago (**Skip to Q7**)
c. ☐Between two and five years ago (**Skip to Q7**)
d. ☐More than five years ago (**Skip to Q7**)

8. Including today, how many times have you visited in the past 12 months? _____

9. Have you brought a group to this particular session before? Yes / No

10. For the gallery-based part of your visit today, did you:

a. ☐Develop your own activity sheets / materials.

b. ☐Download Museum activity sheets and materials and changed / adapted them for your group.
c. ☐Download Museum materials and used them unadapted.
d. ☐Chose not to use any activity sheets / materials.

11. Based on your experience today do you intend to visit the Museum again? Yes / No

12. If you have any additional comments, please include them here.