



WPI

Evaluation of the Islamic World Gallery at the British Museum

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Abstract

The goal of our project was to assess how visitors engaged with the Albukhary Foundation Gallery of the Islamic World in the British Museum. The Albukhary Gallery replaced the John Addis Gallery, which presented a narrow view of Islamic culture and attracted few visitors according to previous evaluations. We conducted counting, timing, tracing, and surveying to measure visitor engagement in the new gallery and provide a benchmark for future evaluations. From the heat and trace maps we generated, the newly displayed objects (instruments, clothes, and works on paper) presented high attracting and holding power. We recommended that the British Museum provide detailed descriptions and translations for objects, integrate audio clips for displayed instruments, and make family labels obvious.

Executive Summary

The mission of the British Museum is to “inspire and excite visitors ... through well-presented and serviced public galleries and study collections” (“Report and accounts,” 2003). In 2005, the British Museum formed the Interpretation team to assess the level of visitor engagement in its galleries. Most recently, the Interpretation team evaluated and redesigned the Islamic World Galleries in the British Museum. In October 2018, the British Museum opened the Albukhary Foundation Gallery of the Islamic World, which replaced the older John Addis Gallery of the Islamic World. According to museum staff, the old gallery was outdated, presented a narrow view of the Islamic world, and attracted few visitors. The new gallery aims to shed light on Islamic culture in an innovative way by means of a geographical story about the spread of Islam.

The goal of this project was to assist the British Museum in assessing how visitors engaged with the redisplayed Islamic world collections in the Albukhary Foundation Gallery. We identified the purpose for the modifications and additions to the new gallery to develop a framework for measuring visitor engagement; measured the visitor engagement in the Albukhary Foundation Gallery by documenting visitor movements, behaviors, and perceptions; and developed recommendations aligned with the British Museum’s goals to improve the visitor experience.

Methods

We interviewed four key members of the Albukhary Gallery project team due to their different expertise in designing the Islamic World Gallery. The interviews helped us develop a detailed framework to determine which indicators of engagement we would measure and the appropriate methods for measuring each indicator. Based on the indicators of engagement from our framework, we used the evaluative methods of counting, timing, tracing, and surveying to gather both qualitative and quantitative data to measure the engagement in the gallery.

Findings

From the data we collected by tracking visitors, we compiled the data and constructed trace and heat maps to display the results. Additionally, we analyzed the surveys and categorized visitor trends from the short answer questions.

Seventy-eight percent of the 4470 visitors we counted entered the gallery through Room 42, the intended entrance. However, of the visitors who entered through Room 42, only 33% turned left upon entering. The gallery project team designed Room 42 for visitors to turn left upon entering in order to read the introductory panels and watch the introductory video located on the left wall. Thus, two-thirds of the visitors missed the introductory materials. These materials provide context to the gallery’s content and are useful in gaining a well-rounded view of Islamic culture.

Furthermore, our trace maps of 110 visitors indicated that most visitors walk along the edges of the gallery and few visited the displays in the middle. Consequently, visitors that missed the introductory materials lacked the context of the center displays and failed to gain an understanding of the history of Islam. While the displays along the sides of the gallery are thematic, the cases in the center provide a chronological narrative about the spread of Islam throughout the world.

The thematic side displays, which follow the most common visitor pathways, presented the highest attracting and holding power. The most commonly visited display, *21 Stones*, had an average dwell time (holding power) of 33 seconds while the display with the highest overall

holding power, Music and performance, had an average dwell time of 47 seconds. The surveyed visitors most commonly reported that their favorite displays were the instruments, clothes, and works on paper, which were new additions to the Albukhary Foundation Gallery. Additionally, the most popular objects were the robe and African lyre. The reported favorite displays and objects are consistent with the displays that have high attracting and holding power. Thus, visitors are engaging with the additions to the gallery as intended by the gallery project team.

The average dwell time in the gallery was only 5.5 minutes, which is significantly less than the average dwell time of 10.5 minutes measured in the John Addis Gallery. The John Addis Gallery may have had a higher dwell time because 65% of the visitors intentionally visited the gallery, whereas only 46% of the visitors intentionally visited the Albukhary Foundation Gallery. However, the Albukhary Foundation Gallery's dwell time still exceeds the British Museum's average dwell time of 3.3 minutes for galleries in the museum. A quarter of the surveyed visitors described the Albukhary Foundation Gallery as "interesting," which supports the new gallery's higher than average dwell time and suggests that visitors are interested in the content of the gallery.

An important part of our evaluation included collecting visitor demographics in the Albukhary Foundation Gallery in order to draw connections between the types of visitors and their behaviors in the gallery. Eighty-nine percent of the gallery's visitors were from overseas and 57% were non-English speakers. Of these non-English speakers, 16% reported having difficulty reading the labels due to the lack of translations.

We found that few visitors noticed the family labels, even though the family labels were effective in engaging children with the gallery. Of the 36% of the visitors who noticed the family labels and objects, only one in four used the family labels. All the visitors that used the family labels rated them as helpful (rated as 5 or more on a scale from 0 to 10).

Our interviews with the gallery project team revealed that a goal of the gallery was to challenge misconceptions about Islamic culture by displaying objects from around the world. Fourteen percent of surveyed visitors reported that they felt that the gallery challenged their perceptions of Islamic culture due to the content of the gallery: the bright colors used in Islamic clothing, the diversity of art pieces and musical instruments, and the connections between Islam and other religions.

Recommendations

As the Albukhary Foundation Gallery opened only eight months ago, our evaluation is the first analysis of the visitor engagement in the gallery. We provided eight recommendations for the British Museum to improve visitor engagement in the Albukhary Foundation Gallery. Our recommendations related to three areas of the gallery: facility, design, and content. The British Museum can utilize our recommendations for practical modifications to improve the gallery without radically redesigning the content.

- Facility
 - Add more seating to the gallery
 - Sixteen percent of the visitors that offered recommendations on the survey suggested that the British Museum should provide more seating in the Albukhary Foundation Gallery.
 - Additional seating would allow people to sit while watching the videos and encourage them to watch longer.
- Design
 - Provide translations for the objects' texts

- Since 57% of visitors in the gallery are non-English speakers and the labels in the gallery are only in English, non-English speaking visitors strongly suggested having translations in their native languages.
 - Include detailed descriptions about the objects
 - Visitors asked that the museum “present more [information] on the label or have an application for more details.” Since the gallery has its own website with detailed descriptions about each object, QR codes could be a way to direct visitors to these descriptions that already exist but are not widely used.
 - Provide a way to view clothing from the front and back
 - Clothing is one of the visitors’ favorite objects in the gallery. Thirteen percent of the visitors wanted the museum to provide a clear view of the clothing from more angles.
 - Make family labels clear and obvious
 - All of the visitors who used the family labels thought they were useful, but only 36% of visitors noticed that there were family labels in the gallery.
- Content
 - Add a timeline to the regional map
 - The trace map revealed that few visitors went to the cases in the middle of the gallery. During the survey, 16% of visitors reported they were confused about the intention and flow of the middle sections.
 - Include more audio clips for the displayed instruments
 - Instruments have the highest attracting and holding power in the gallery. Additionally, visitors reported that they want to learn how the musical instruments sound.
 - Incorporate a temporary display for underrepresented objects
 - Muslim visitors noted that there are few Qur’an books and little calligraphy in the gallery. Visitors from central Asia and Morocco expressed unhappiness in the lack of objects from their native countries.

Conclusion

The British Museum has plans for further evaluative work on specific displays in the Albukhary Foundation Gallery and will use our data to provide context for how the displays relate to the rest of the gallery. Future evaluations of the gallery can refer to our evaluation as a benchmark for visitor engagement. By gathering information on all aspects of individual visits, the Interpretation team can capture a holistic view of a visitor’s experience in the Albukhary Foundation Gallery to provide a richer understanding of how one engages with the gallery. We hope that our findings and recommendations will help the British Museum refine the visitor experience and increase visitor engagement within the Albukhary Foundation Gallery.

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Authorship

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<i>Introduction</i>	Wicke	Mederer	Mederer, Wicke
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<i>Methods: Objective 1</i>	Chen	Mederer	Mederer, Wicke
<i>Methods: Objective 2</i>	Wicke	Gao	Mederer, Wicke
<i>Methods: Objective 3</i>	Mederer	N/A	Wicke
<i>Findings: Visitor Demographics</i>	Wicke	Mederer	Mederer
<i>Findings: Visitor Behavior</i>	Chen	N/A	Mederer, Wicke
<i>Findings and Analysis: Thoughts</i>	Gao	N/A	Mederer
<i>Recommendations</i>	Gao	Chen	Mederer, Wicke
<i>Conclusion</i>	Mederer	N/A	Wicke

1. Introduction

Museums perform the distinctive task of both preserving history and educating the public. They “ensure understanding and appreciation for various groups and cultures[, and] promote [a] better understanding of our collective heritage” (Wages, 2017). Key components of museum efforts to educate include challenging perceptions and informing visitors.

One of the most well-known museums in the world is the British Museum in London, England, which holds one of the world’s greatest collections with over 80,000 objects on display (“Fact sheet,” n.d.). The mission of the British Museum is to “inspire and excite visitors ... through well-presented and serviced public galleries and study collections” (“Report and accounts,” 2003). In 2005, the British Museum formed the Interpretation team to assess the level of visitor engagement in the galleries (Frost, 2017). Most recently, the Interpretation team evaluated and redesigned the Islamic World Galleries in the British Museum.

In October 2018, the British Museum opened the Albukhary Foundation Gallery of the Islamic World, which replaced the older John Addis Gallery of the Islamic World. According to museum staff, the old gallery was not very successful as it was outdated, presented a narrow view of the Islamic world, and did not have many visitors (Frost, 2019a). The new gallery aims to shed light on Islamic culture in an innovative way by means of a geographical story about the spread of Islam. While the British Museum previously conducted a focus group for the Albukhary Foundation Gallery, the museum wanted to learn more about the visitor experience through observing visitor behaviors, tracking visitor pathways through the gallery, measuring dwell times for each display, and surveying visitors (Frost, 2019b).

The goal of our project was to assist the British Museum in assessing how visitors engaged with the redisplayed Islamic world collections in the Albukhary Foundation Gallery. To achieve our goal, we identified the purpose for the modifications and additions to the new gallery to develop a framework for measuring visitor engagement; measured the visitor engagement in the Albukhary Foundation Gallery by documenting visitor movements, behaviors, and perceptions; and developed recommendations aligned with the British Museum’s goals to improve the visitor experience. From these objectives, we delivered an analysis of the visitor engagement with recommendations to inform the British Museum about the aspects of the gallery that were fulfilling their goals and modifications to create a more engaging and informative gallery.

2. Background

In this chapter, we review the history of the British Museum and its Islamic World Galleries as well as the definition of engagement and the process of designing the Albukhary Foundation Gallery.

2.1: The British Museum

Museums preserve and present cultural property intended to engage and inform visitors about a broad scope of topics. The British Museum (see Figure 1), located in the Camden Borough of London, England, is the most popular visitor attraction in the United Kingdom with over six million visitors annually. The British Museum aims “to hold for the benefit and education of humanity a collection representative of world cultures, and ensure that the collection is housed in safety, conserved, curated, researched and exhibited” (“Report and accounts,” 2018). At the time of its founding in the 18th century, the British Museum started as a private collection of objects, gathered by Sir Hans Sloane. After his passing, Sir Hans Sloane offered his collection to King George II who then opened the collection to the public and established the museum on 7 June 1753. Though the founding collection mainly consisted of books, manuscripts, natural specimens, and antiquities, it quickly grew to include several historical artifacts including the Rosetta Stone and the Parthenon Marbles. Today, the British Museum houses ten different curatorial and research departments with over eight million historical and cultural pieces. Included in the 80,000 objects currently on display in the British Museum is the diverse Islamic world collection.



Figure 1: Front facade of the British Museum.

2.2: The Islamic World Galleries

While Islamic art encompasses a wide range of lands, periods, and genres, the British Museum’s diverse and world-class collections of the Islamic world allow visitors to explore the

cultural significance, breadth, and impact of the Islamic world (“The Albukhary Foundation,” 2019). Additionally, this section describes how the British Museum created the Albukhary Foundation Gallery based on findings from the evaluation of the John Addis Gallery.

2.2.1: Islamic art & culture in museums

In recent years, museums worldwide have been renovating galleries containing Islamic art collections (Schwartz, 2013). Museums displayed Islamic art in previous decades based on “decorative brilliance [rather] than cultural context” (Schwartz, 2013). Some unique aspects of Islamic art include refraining from depicting the prophet Muhammad, limiting the depictions of living beings such as humans and animals, and extensively using mosaics and ceramic tiles in artwork. Museums with new Islamic art galleries, such as the Louvre, the Metropolitan Museum of Art, and the Pergamon Museum, are focusing on conveying the diversity of Islamic culture with both historical and modern contexts. The hope is that visitors will “neither [be] seeing the art in isolation from its culture nor obsessively linking it to the region’s latest outrage or disaster” (Schwartz, 2013).

Museums allow visitors to create and expand their own connections to the artwork by telling the narrative through multiple voices, instead of being limited by one perspective. The Dutch Tropenmuseum incorporated personal stories of Muslims from four cities throughout the *Urban Islam* exhibit and while “the opinions expressed in the pavilions contradicted each other, [it] allow[ed] visitors to note the complexities of Islamic discourse and practice” (Shatanawi, 2012). In a case study done on the 2012 British Museum special exhibition *Hajj: Journey to the Heart of Islam*, Francis found that the exhibit incorporated the experiences of Muslims to provide a “multi-voiced” narrative. Additionally, quotations from both historical pilgrims and films of modern rituals of the Hajj were in the exhibition. The *Hajj: Journey to the Heart of Islam* attracted more than 140,000 visitors, of which 47% were Muslim compared to the 3% of the British Museum’s visitors identifying as Muslim (Francis, 2015). The British Museum continues to share Islamic art and culture with its visitors through its permanent collections in the Islamic World Galleries.

2.2.2: The John Addis Gallery

In 1989, the John Addis Gallery of the Islamic World opened as the primary location for housing Islamic artifacts in the British Museum. Previously, the Islamic displays within the British Museum were in multiple rooms spread across the ground and upper floors. The John Addis Gallery allowed the British Museum to present its Islamic collections together, while also tripling the amount of space devoted to Islamic art (Bacharach, 1991). While the John Addis Gallery opened nearly 30 years ago, the gallery remained unchanged from the time of its opening. Thus in 2016, the British Museum’s Interpretation team conducted an evaluation of the John Addis Gallery.

2.2.3: The Interpretation team’s evaluation of the John Addis Gallery

The Interpretation team carries out gallery evaluations to determine “how successful an individual project has been in meeting its objectives, and to inform the development of future displays” (Frost, 2017). The Interpretation team formed in 2005 to develop new galleries in the British Museum with the purpose of “encourag[ing] visitors to actively engage, to look closer at objects and to reveal something relevant that they might otherwise have missed” (Frost, 2017).

The *Oxford English Dictionary* defines engage as “to attract and hold fast (attention, interest).” Evaluating a gallery is necessary to determine how visitors are engaging with the displays. In evaluating the John Addis Gallery, the Interpretation team found several recurring issues:

- The gallery received few unintentional visitors since the gallery (see Figure 2) was far from the main section of the museum (Frost, 2019b)
- The thematic content of the gallery confused visitors
 - Muslim visitors felt there was a lack of meaningful context (Frost, 2017)
 - Texts accompanying the displays were long but left the visitors wondering how and by whom the objects were used (Brown, 2016a)
 - Visitors were unaware of the thematic structure intended by the curatorial team due to the lack of key objects, which act as entry points into larger displays in the gallery (Brown, 2016a)
- The gallery presented Islamic culture in a limited view
 - The John Addis Gallery contained mostly ceramic art from the Arabian Peninsula and the Middle East, which is a geographically narrow perspective (Brown, 2016a)
 - For half of the visitors, the gallery did not extend their views of the Islamic world (Brown, 2016a).
- The gallery contained a lack of interactive opportunities for children to engage directly with the content and encourage their interest in Islamic history (Brown, 2016a).

These factors led the British Museum to redesign the Islamic World Galleries by creating the new AlbuKhayr Foundation Gallery.

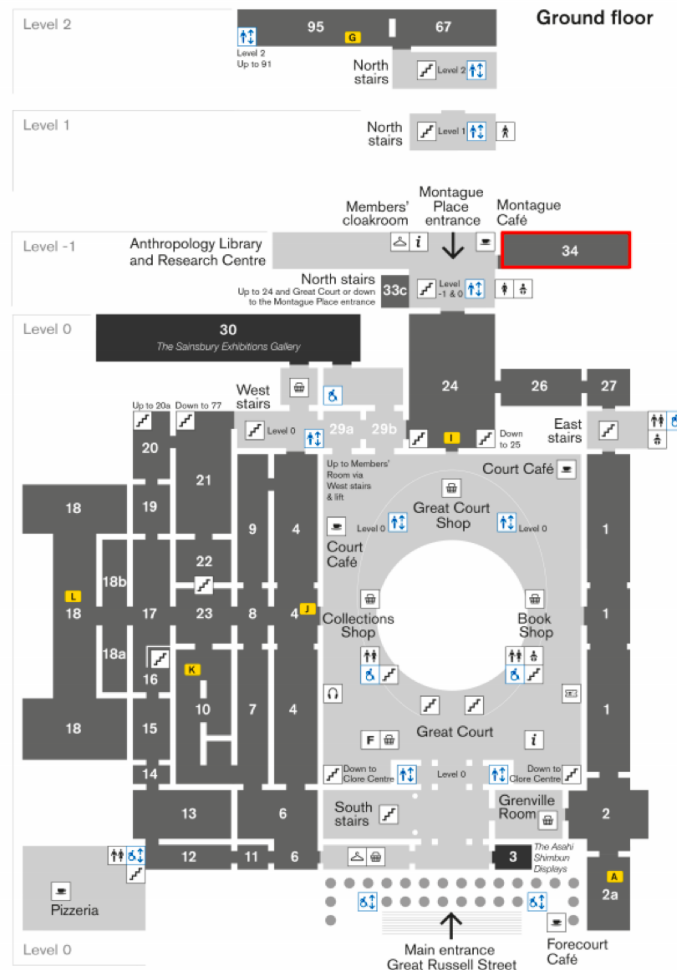


Figure 2: The John Addis Gallery in Room 34 on the ground floor by the back entrance (“Floor Plan,” 2017).

2.2.4: *The Albukhary Foundation Gallery*

On 18 October 2018, the British Museum opened the Albukhary Foundation Gallery of the Islamic World (see Figure 3). Syed Mokhtar Albukhary founded the Yayasan Albukhary Foundation in 1974 to contribute “in the fields of education and preserving culture” (“Values,” 2018). Together, the Albukhary Foundation and the British Museum present Islamic culture in new, engaging ways (see Appendix A) in the gallery, while also highlighting the diversity of Islamic culture. The Albukhary Foundation Gallery redisplay the British Museum’s collections of the Islamic world that previously existed in the John Addis Gallery of the Islamic World (“Gallery of the Islamic World,” 2015).



Figure 3: Room 42 of the Albukhary Foundation Gallery (“The Albukhary Foundation,” 2019).

The British Museum created the Albukhary Foundation Gallery to engage visitors better with the Islamic world collections, while also portraying the diversity of Islamic culture. The museum placed the new Albukhary Foundation Gallery in a more central location on the upper floor of the museum (see Figure 4) in hopes that more visitors would pass by during their visit in the museum. The collection includes objects such as paintings, clothing, tools, and coins from West Africa to Southeast Asia, in an effort to depict a more complete picture of Islamic culture (“The Albukhary Foundation,” 2019). The new gallery utilizes gateway objects (see Appendix B) to guide visitors to important displays in the gallery. To make the gallery more interactive, the Interpretation team reduced the amount of text and incorporated more audio and video to increase accessibility for non-English speaking visitors. Additionally, at the center of the Albukhary Foundation Gallery is an object handling point for visitors to “access authentic artefacts connected to those in the displays around them” (Frost, 2019b). The gallery aims to be more engaging through the Hands On desk, tours, music performances, and demonstrations (Frost, 2019b). Since the opening of the gallery, the British Museum has been devoted to

ensuring that the Albukhary Foundation Gallery displays a multi-view perspective on the Islamic World.

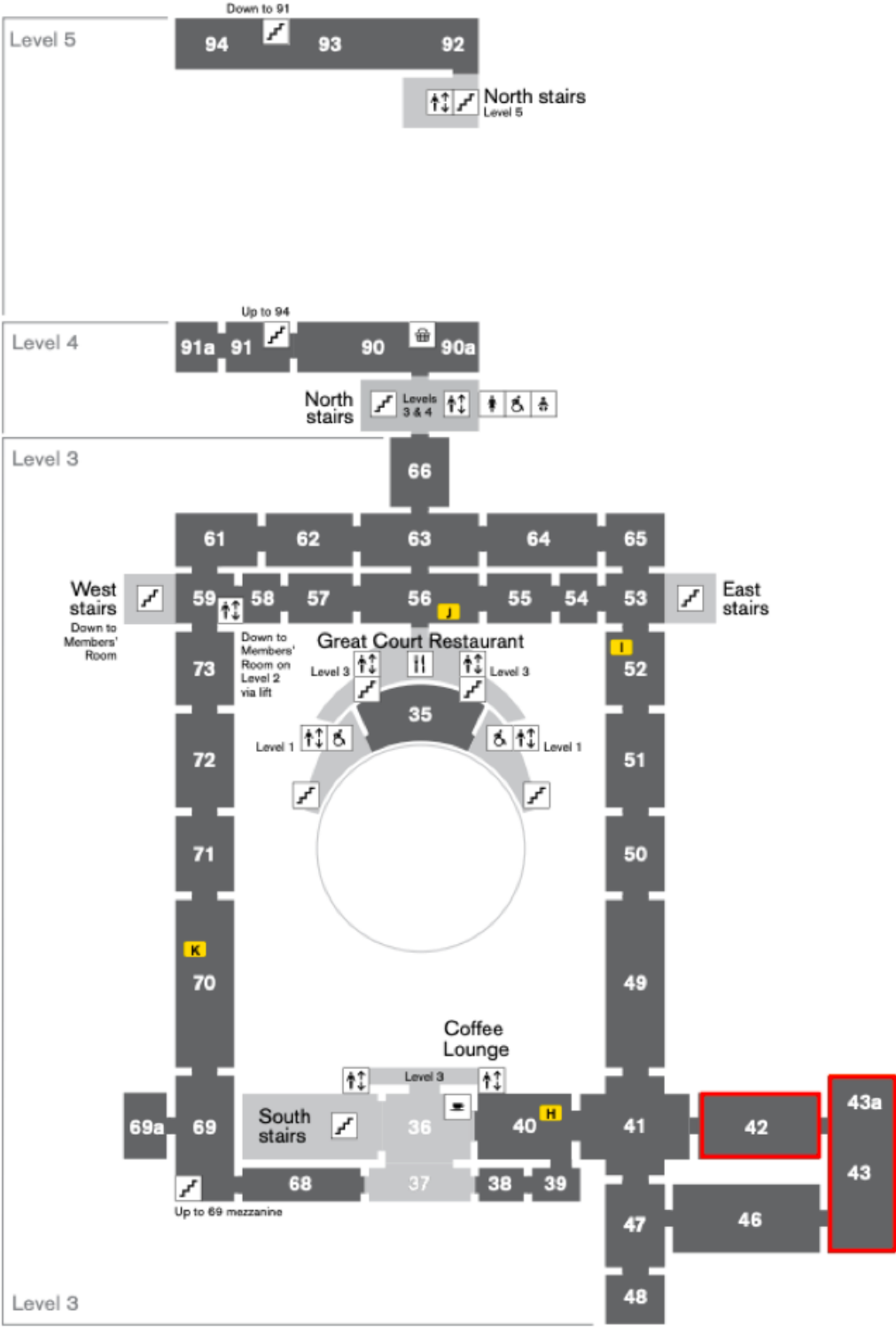


Figure 4: The Albukhary Foundation Gallery in Rooms 42 and 42 on the upper floor (“Floor Plan,” 2018).

3. Methods

The goal of this project was to assist the British Museum in assessing how visitors engaged with the redisplayed Islamic World collections in the Albukhary Foundation Gallery. We developed three objectives to achieve this goal:

1. Identify the purpose for the modifications and additions to the new gallery to develop a framework for measuring visitor engagement
2. Measure the visitor engagement in the Albukhary Gallery by documenting visitor movements, behaviors, and perceptions
3. Develop recommendations aligned with the British Museum's goals to improve the visitor experience

As our deliverable, we created several visual interpretations of the data to show how visitors are engaging with the content of the gallery and provided recommendations to the British Museum in order to improve the visitor experience in the Albukhary Foundation Gallery.

3.1: Objective 1: Identify the purpose for the modifications and additions to the new gallery to develop a framework for measuring visitor engagement

3.1.1: Interviewing the British Museum's Interpretation team

Although the Albukhary Foundation website and the evaluation of the John Addis Gallery implied that the museum redisplayed the Islamic world collection, the information did not fully portray the intentions and desires for the creation of the Albukhary Foundation Gallery. Interviewing the British Museum's Albukhary Gallery project team allowed us to identify the modifications and the reasons for the modifications which enabled us to evaluate how effectively the team had met its goal.

We interviewed four key members of the Albukhary Gallery project team due to their different expertise in designing the Islamic World Gallery. These four members were the Head of Interpretation, the Digital Project Manager, the Head Curator, and the Project Manager. Each interview took place in the British Museum and lasted approximately 30 minutes (the interview questions appear in Appendix C).

We asked general questions about the member's role and contributions to the Albukhary Foundation Gallery as well as more detailed questions about the process of creating the gallery and what difficulties arose. We also asked for their opinions about how to define visitor engagement and what specific aspects they wanted us to measure and learn about in the Albukhary Foundation Gallery. The interviews helped us understand the purpose for the modifications and additions to the new gallery in order to define the standardized framework for measuring visitor engagement.

3.1.2: Developing the framework

To examine how visitors engage with the gallery, we developed a detailed framework to determine which indicators of engagement we would measure and the appropriate methods for measuring each indicator. The framework consisted of the visitor behaviors we measured, how we measured the behaviors, and what the behaviors revealed about visitor engagement. We created the framework (see Table 1) by incorporating information from our literature review, interviews with the gallery project team, and the evaluation of the John Addis Gallery.

Table 1: Framework for measuring visitor engagement.

<i>Data</i>	<i>Method</i>	<i>Outcome</i>
Dwell time in the gallery	Timing	Time spent relates to interest in gallery
Dwell time for each display	Timing	Time spent relates to interest in display
Number of stops	Tracing / timing	More stops indicates that more objects interest a visitor
Movement in the gallery	Tracing / observing	Visitor pathways show what attracts and engages visitors
Interest in the gallery (as a whole)	Surveying	Did visitors find the gallery interesting / would they come again or recommend to a friend
Visitor perceptions	Surveying	Challenge / change visitors' perceptions
Interacting with Hands On objects	Observing / tracing / timing	Hold objects and/or ask questions
Using digital media	Observing / tracing / timing / surveying	Scan QR code, watch videos, listen to audio clips
Reading family labels	Observing / tracing / timing / surveying	Point out objects and ask questions to children
Reading labels	Observing / surveying	Do visitors think the labels are useful
Looking at maps	Observing / surveying	Understand the regions of Islamic World

3.2: Objective 2: Measure the visitor engagement in the Albukhary Foundation Gallery by documenting visitor movements, behaviors, and perceptions

Based on the indicators of engagement from our framework, we used the evaluative methods of timing, tracing, observing, and surveying to gather both qualitative and quantitative data to measure the engagement in the gallery (see Figure 5). We collected data at various times and days of the week to understand how the time of day influenced the number of visitors in the gallery. For more information regarding visitor tracking, see Appendix D.

Measuring Visitor Engagement

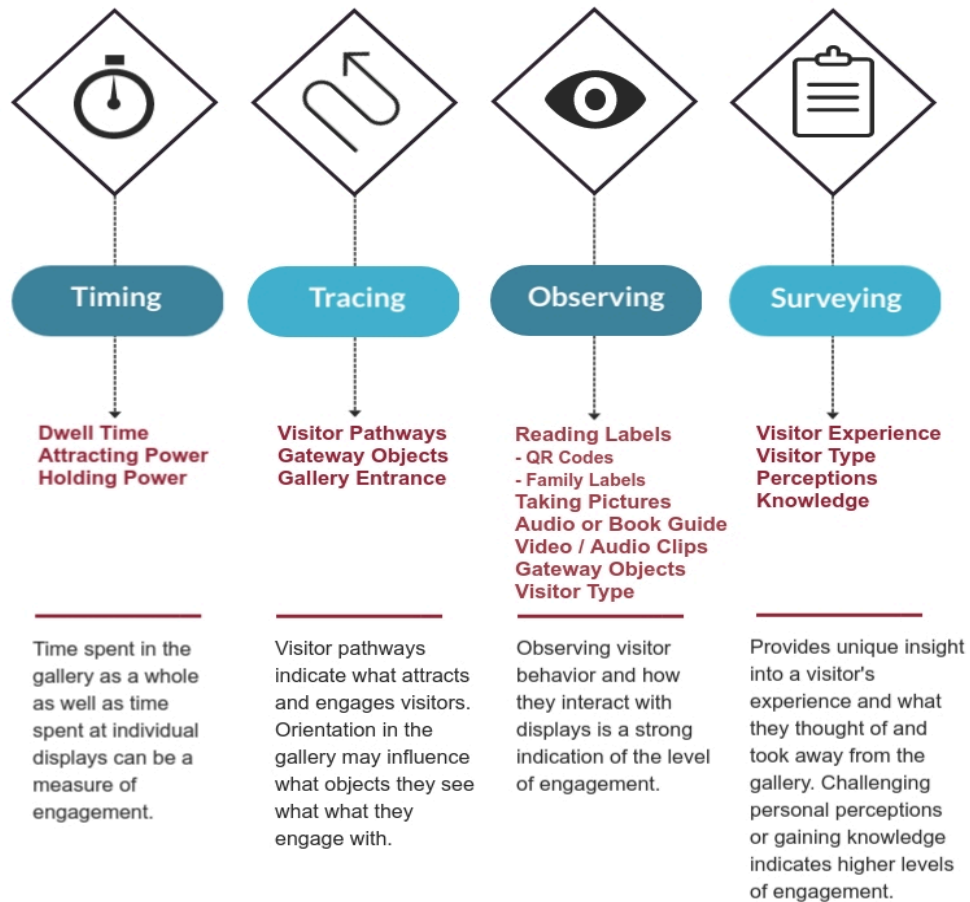


Figure 5: Diagram that relates how each data collection method connected to the information it provided and how it measured visitor engagement.

3.2.1: Timing

The amount of time visitors spend in the gallery or at a specific display is an indicator for the depth of engagement. Timing a visitor consisted of using a stopwatch and annotating a gallery map. The person timing started the stopwatch when the visitor entered the gallery and used the lap function to measure how long the visitor stopped at each individual display. A visitor stop, as defined by Serrell, consists of “both feet planted on the floor and head or eyes pointed in the direction of the element for 2 to 3 seconds or more” (as cited in Yalowitz & Bronnenkant, 2009, p. 50). Additionally, the team member recorded the lap number next to the corresponding display on the gallery map.

3.2.2: Tracing

Another indicator of engagement is the number of visitors that are attracted to a display. In order to determine which displays in the Albukhary Foundation Gallery were most engaging, we traced visitor pathways to visualize the common routes through the gallery and see which displays drew in visitors. For each visitor traced, a team member annotated a new copy of the gallery map (see Figure 6) to record the visitor's movement throughout the gallery.

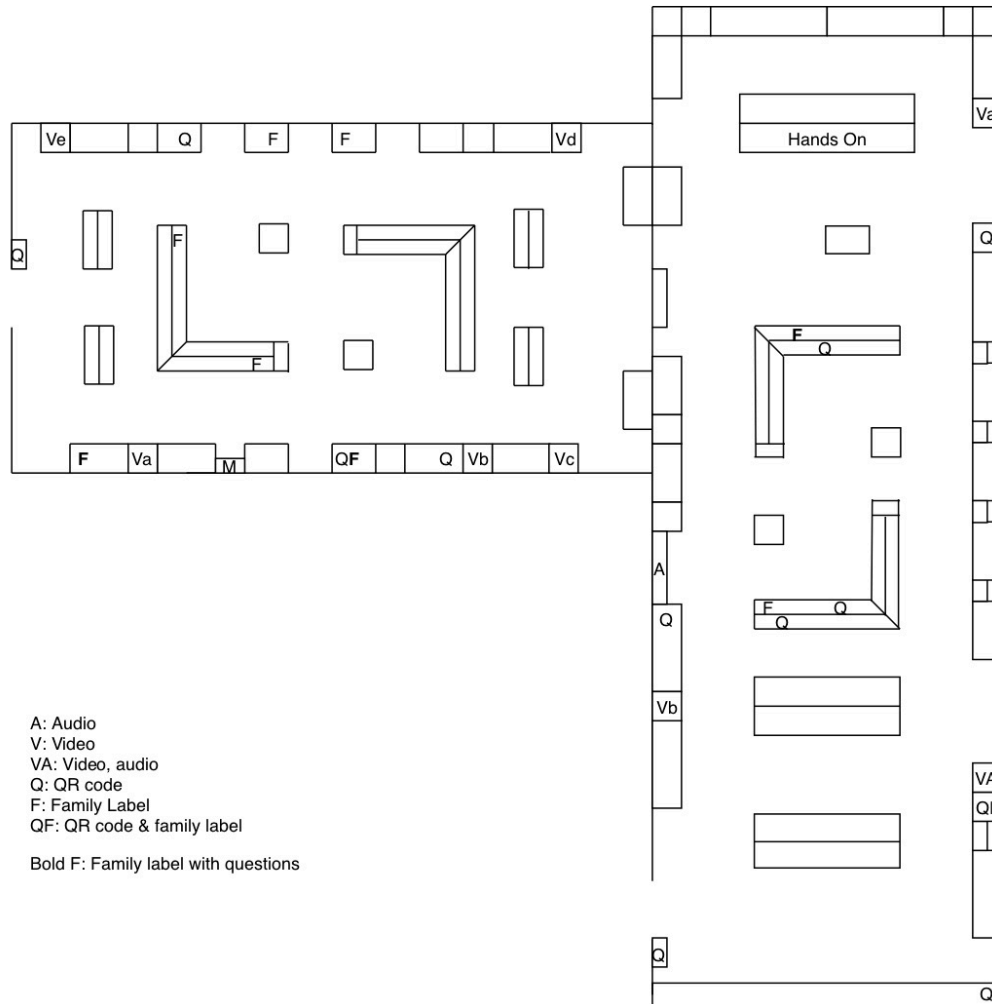


Figure 6: Islamic World Gallery map with Rooms 42 (horizontal) and 43 (vertical) that was used to record visitor movements.

Looking at individual trace maps allowed us to see which displays visitors were first drawn to, which displays attracted visitors based on previous stops, as well as which parts of the gallery people did not visit. A full trace map, comprised of all the traces overlaid, showed the common pathways and most commonly visited displays.

3.2.3: Observing

For observing, a team member was responsible for recording visitor behaviors, such as watching videos, reading the introduction panels, and looking at the maps. The team member also noted distinctive behaviors of visitors, which helped encapsulate a holistic view of the visitors' experiences and provide a richer understanding of how visitors engage with the gallery.

Another aspect of observing was counting the visitors that enter the gallery. We counted the number of visitors that entered Room 42 vs. Room 43, males vs. females, adults vs. children, and visitors that turned right vs. straight vs. left when entering Room 42. Counting data revealed the audience composition and initial orientation of visitors in the gallery.

3.2.4: Visitor surveying

A team member surveyed visitors leaving the gallery at the exit to Room 43. We surveyed from Room 43 since we did not want to block gallery content by the entrance to Room 42 and most visitors exit through Room 43. If a visitor agreed to take the survey, we informed them of their rights to leave any questions blank or stop the survey at any time. We created the survey in Qualtrics and presented the survey on a tablet (see Appendix E). In the survey, we asked about visitor demographics, prior knowledge and perceptions of Islamic culture, and the visitor experience in the Albukhary Foundation Gallery.

In addition to the English version, we translated the survey into Arabic, Spanish, French, Italian, and Chinese, and modified the flow of the questions to be respectful of the difference in cultures. We chose Arabic as one of the alternate languages due to the content and theme of our gallery and the other languages since they are the second through fifth most “preferred languages” by British Museum visitors (Morris Hargreaves McIntyre, 2018).

3.2.5: Data analysis and representation

After we collected data from tracking visitors, we compiled the data and constructed trace and heat maps to display the results. Additionally, we analyzed the surveys and categorized visitor trends from the short answer questions.

Trace map

A graphical representation of visitor tracking data is a trace map that shows how visitors flow through a museum or gallery. Tracing visitors “enables [exhibit designers] to determine how visitors are using various components of the exhibition, whether the exhibition has a good flow, and whether visitors are engaging with the exhibition in the manner intended” (Yalowitz & Bronnenkant, 2009, p. 49). The convergence of multiple lines on a trace map demonstrates the common pathways to the main attractions in a gallery as well as how visitors navigate through the building (Martinez, 2005). We generated a trace map of the whole gallery by overlaying each individual trace map which created one image showing multiple visitor pathways through the gallery. The thicker lines, meaning more people taking that particular path, indicate that people may be drawn towards specific objects and engaging with displays along that path.

Heat map

Heat maps graphically display quantitative data on a color scale where red is the highest number, concentration, or percentage of visitors who stopped at a certain display, and blue is the lowest. Heat maps can be useful for displaying multiple aspects of visitor tracking, such as:

- Attracting power, which represents the percentage of people that visit a display and is calculated by “the number of visitors who stopped at [a display divided by] the total number of visitors tracked” (Brown, 2016b).
- Holding power, which is the average time visitors spend at a given display (Brown, 2016b).
- First case visited, which is the first display visitors stopped at in the gallery

Using the timing and tracing data, we created heat maps for the attracting power, holding power, and first case visited to depict which displays attracted more visitors and were more engaging to the visitors in our sample.

Box and whisker plot

Although averages summarize large amounts of data into a single value, averages mask out other important information from the data, such as outliers. To display dwell times within the gallery, we created a box and whisker plot. A box and whisker plot is a graph that presents the minimum, first quartile, median, third quartile, and maximum. The location of the median indicates whether the graph is right skewed, left skewed, or symmetric, which determines how much the outliers affected the distribution of the overall dwell time.

Other charts

In order to analyze the results of the survey questions, we graphically displayed the results of the multiple choice and scaled questions and categorized results from the open responses to display more concise information. While most of the multiple choice questions provided general visitor demographics, the scaled questions and open response answers can show information such as a shift in knowledge and perceptions, as well as insight into what the visitors enjoyed or would want to see improved in the future. Information on visitor engagement comes mostly from the short answer questions because it revealed the extent to which the visitor absorbed information from the gallery. Some of the 0-10 scale questions asked the visitor to rank their interests and perceptions, which added another layer to engagement. The survey allowed the visitors to assess their personal engagement within the gallery and revealed a different perspective of visitor engagement in the gallery.

3.3: Objective 3: Develop recommendations aligned with the British Museum's goals to improve the visitor experience

Our interviews with the British Museum Interpretation team informed us as to what the gallery should be accomplishing whereas our evaluation of the visitor experience in the gallery showed us how visitors were acting in the gallery. We then identified which aspects of the visitor experience differed from the Albukhary Gallery project team's intentions for the gallery. The short answer survey questions gave us insight as to why the visitor experience differed from the expectations of the gallery project team. We submitted recommendations to the British Museum's Interpretation team for their use in future evaluations or redispays of the gallery.

4. Findings and Analysis

In this chapter, we discuss important insights from analyzing the qualitative and quantitative data we collected from counting, timing, tracing, observing, and surveying. As the results of Objectives 1 and 2, we examine the visitor demographics, visitor behaviors, and visitor thoughts on the Albukhary Foundation Gallery.

4.1: Visitor Demographics

An important part of our evaluation included collecting visitor demographics in the Albukhary Foundation Gallery in order to draw connections between the types of visitors and how they behaved in the gallery. We gathered visitor demographic data by surveying and counting the visitors entering the gallery.

Finding 1: Gender ratio is consistent with both the John Addis Gallery and the British Museum’s audience

Of the 4470 visitors we counted entering the Albukhary Foundation Gallery, 53% were female and 47% were male. The gender ratio in the gallery is consistent with that of the British Museum’s audience as a whole (Morris Hargreaves McIntyre, 2018) as well as the John Addis Gallery’s gender ratio (Brown, 2016a).

Finding 2: The Albukhary Foundation Gallery has a younger audience than both the John Addis Gallery and the British Museum’s audience

Seventy-five percent of the 100 visitors we surveyed were under the age of 45, with the largest age bracket being 25 to 34 year olds (see Figure 7). Since we only surveyed adults, there were no visitors in the 0 to 15 age bracket. The Albukhary Foundation Gallery has a younger audience than the British Museum as a whole since only 63% of British Museum visitors were under the age of 45 (Morris Hargreaves McIntyre, 2018). Thus, engaging younger visitors with the content of the gallery could be a new challenge for the British Museum.

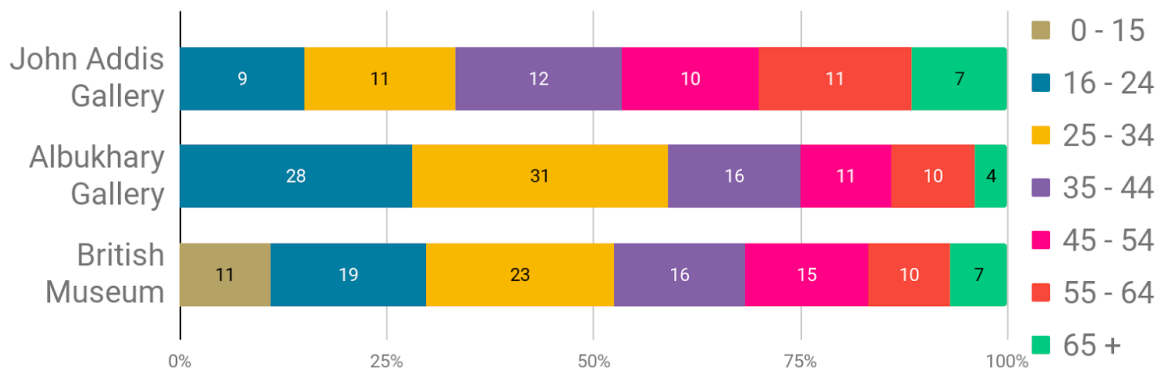


Figure 7: Stacked bar chart displaying ages of surveyed visitors.

Finding 3: The majority of visitors were international

While there were twenty-nine different countries reported as a visitor’s homeland, 96% of the visitors were from Europe, Asia, and the Americas with the three most common countries being the United States with 27% of the visitors, China with 18% of the visitors, and the United Kingdom with 11% of the visitors (see Figure 8 and Table 2). This is significantly different from the John Addis Gallery where half of the visitors were from the United Kingdom (Brown, 2016a).

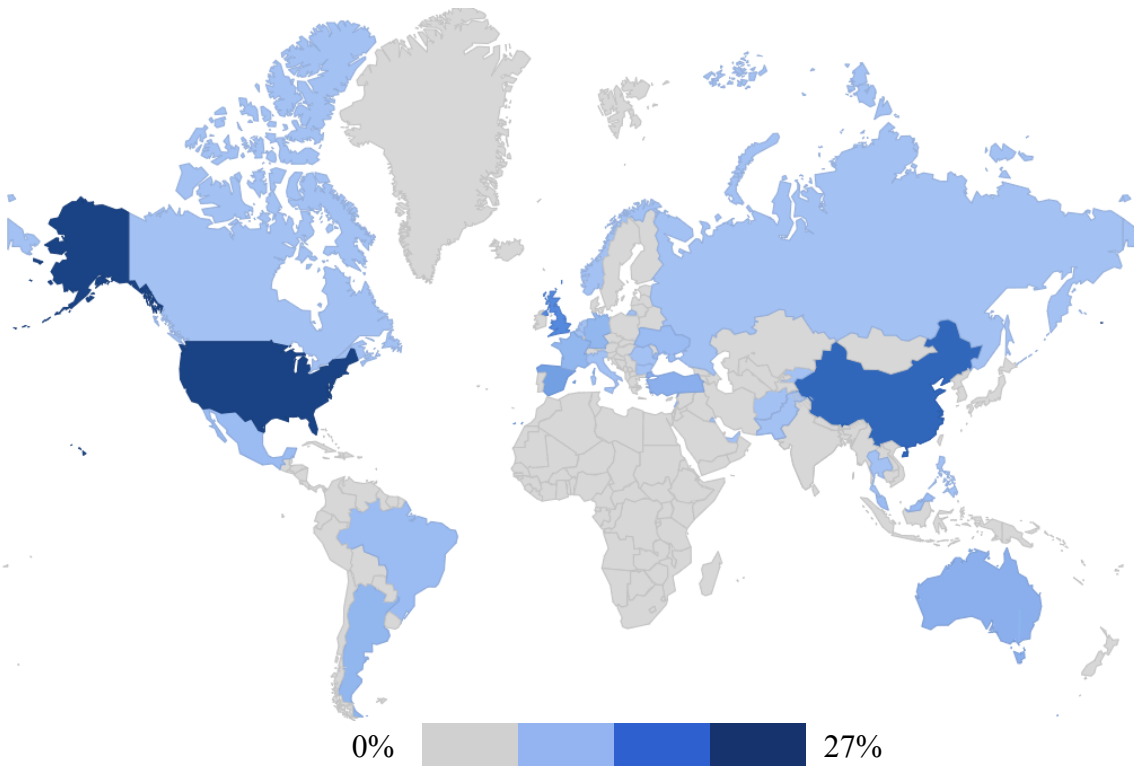


Figure 8: Map of visitors' nationalities in the Albukhary Foundation Gallery.

Table 2: Visitors' nationalities in the Islamic World Gallery.

Country	Number	Country	Number
United States	27	Bulgaria	1
China	18	Canada	1
United Kingdom	11	Italy	1
Spain	7	Kuwait	1
Australia	4	Kyrgyzstan	1
Turkey	4	Lebanon	1
Argentina	3	Netherlands	1
France	3	Norway	1
Germany	3	Pakistan	1
Brazil	2	Philippines	1
Malaysia	2	Romania	1
Mexico	2	Russia	1
Ukraine	2	Thailand	1
Afghanistan	1	United Arab Emirates	1
Belgium	1		

The survey also revealed that 89% were international visitors, and 57% of the visitors were non-English speakers. Sixteen percent of the visitors reported having trouble reading the

texts accompanying the objects and asked that the British Museum provide translations in the gallery, which is unsurprising since more than half of the visitors are non-English speakers. Additionally, a few visitors used the Google Translate picture mode to read the texts in the gallery.

Finding 4: Significant increase in the number of first-time British Museum visitors to the gallery

We examined visitor frequency in our survey to understand the visitors’ familiarity with the British Museum. Sixty-six percent of the visitors reported that it was their first time visiting the British Museum (see Figure 9) which is a 30% increase compared to the John Addis Gallery’s number of first time visitors (Brown, 2016a) and is very close to the British Museum’s general audience (Morris Hargreaves McIntyre, 2018). The increase in first-time visitors indicates that the new location of the gallery is effective in attracting visitors unfamiliar with the museum.

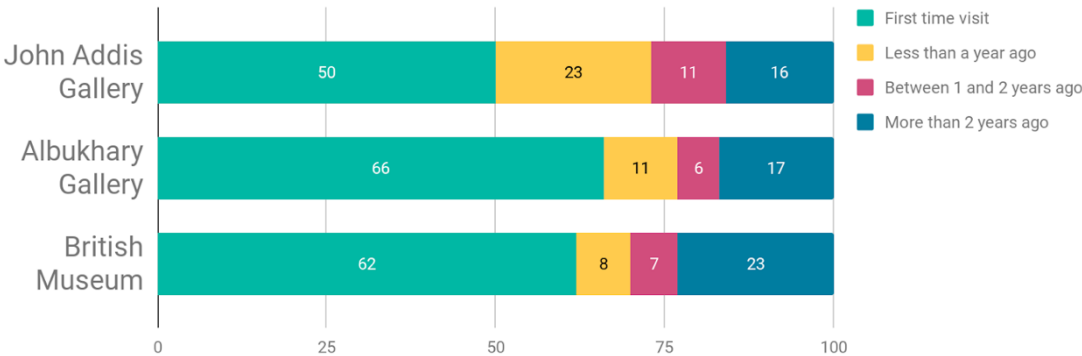


Figure 9: Stacked bar chart displaying the visitor frequency.

Finding 5: Increase in the number of non-intentional visitors

The British Museum’s map lists 12 highlight objects for first-time visitors to explore. The Albukhary Foundation Gallery is in between two highlight objects, the Lewis Chessmen in Room 40 and Oxus Treasure in Room 52. The Albukhary Foundation Gallery’s location in relation to the highlight objects could contribute to the 54% of visitors that walk through without the intention to visit the gallery (see in Figure 10). However, the other 46% of visitors intentionally visited the gallery, whether their motivation was the desire to learn more about Islamic culture, the advertising of the gallery within the museum, the recommendation of a friend, or other alternative motives. These other motives included:

- Visiting the new gallery since they had already seen the John Addis Gallery
- Visiting all the galleries in the British Museum
- Visiting during Ramadan, an important month in Islamic culture

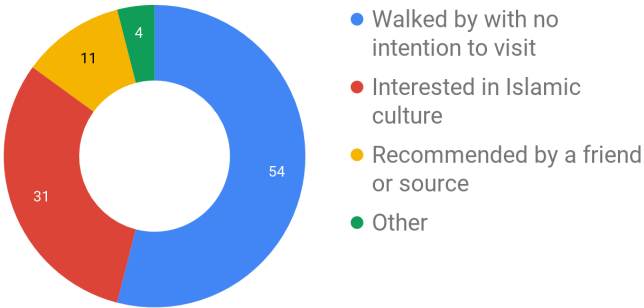


Figure 10: Pie chart showing the motivations for visiting the Albukhary Foundation Gallery.

Over half of the visitors to the Albukhary Foundation Gallery were non-intentional visitors which is a substantial increase from the 35% of visitors to the John Addis Gallery (Brown, 2016a). The increase in non-intentional visitors suggests that the new gallery’s target audience has shifted from visitors actively seeking knowledge about the Islamic culture to general museum visitors.

4.2: Visitor Behaviors

In this section, we summarized the visitor behaviors in the introductory zone of the Albukhary Foundation Gallery, including the total number of visitors who entered Room 42 or 43 and how they turned upon entering the gallery. To analyze how visitors behaved in the gallery, we created a trace map displaying the visitors’ movements in the gallery, a box and whisker plot presenting visitor dwell times as well as different types of heat maps showing the attracting power, holding power, and first case visit of each display in the gallery.

Finding 6: Most visitors entered Room 42 and turned right

Out of the 4470 visitors we counted, 78% entered the gallery through Room 42, which is the intended entrance to the Albukhary Foundation Gallery. The gallery project team designed Room 42 to have visitors turn left upon entering in order to read the introductory panels and watch the introductory video located on the left wall. However, of the visitors who entered through Room 42, only 33% turned left (see Figure 11) upon entering. Thus, two-thirds of the visitors missed the introductory materials. These materials provide context to the gallery’s content and are useful in gaining a well-rounded view of Islamic culture.

While some visitors opted to turn right when presented with a clear path to turn in either direction, other visitors may have felt obligated to turn right due to visitors watching the introductory video and blocking the left pathway. Due to the high percentage of international visitors, it is unclear whether right-turn or left-turn bias affected the direction visitors turn when entering the gallery.

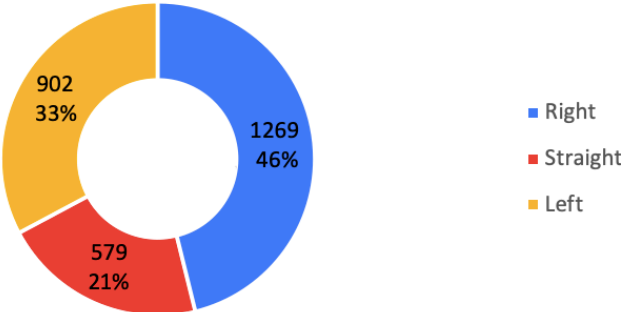


Figure 11: Initial turn of visitors entering Room 42.

Finding 7: Most visitors walked along the edges of the gallery

We traced 110 visitors and drew their path through the Albukhary Foundation Gallery to create the trace map (see Figure 12), where each line represents an individual visitor’s path. The thicker, darker lines on the trace map show that most visitors walk along the edges of the gallery. While the displays along the side of the gallery are thematic, the cases in the center provide a chronological narrative about the spread of Islam throughout the world. Finding 6 showed that the majority of people turned right, therefore missing the introductory materials which provide an overview of the gallery and context to the center displays. Accordingly, the survey revealed that visitors were confused about the flow of the gallery and did not stop at the center displays as frequently as the thematic side displays.

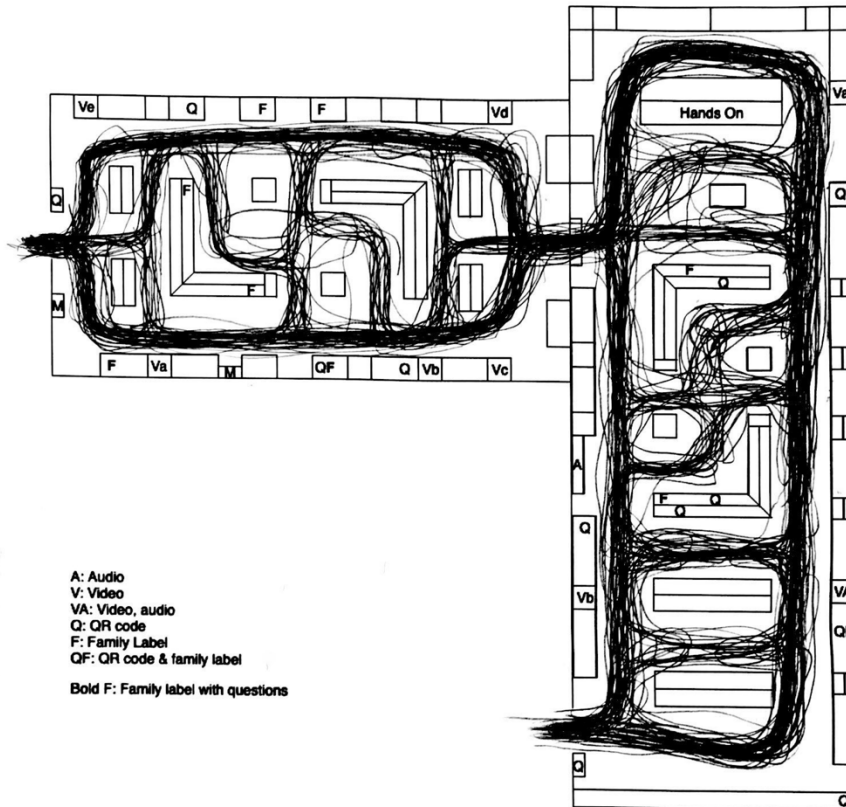


Figure 12: Trace map for Rooms 42 and 43

Finding 8: Average dwell time is less than the John Addis Gallery’s average but greater than the British Museum’s average

The average dwell time of the 185 visitors we timed was 5 minutes and 29 seconds. While the Albukhary Foundation Gallery’s average dwell time is just over half of the John Addis Gallery’s dwell time, 5.5 minutes is greater than the British Museum’s average dwell time for its galleries of 3 minutes and 19 seconds (Brown, 2016a). In the box and whisker plot and outliers table (see Figure 13 and Table 3), the maximum dwell time was 55 minutes and 24 seconds, the minimum dwell time was 29 seconds, and the median dwell time was 3 minutes and 17 seconds. The distribution of the graph is right skewed, indicating that the 13 outliers increased the average dwell time. Since 65% of the visitors were first-time visitors, they may have wanted to visit many galleries or all 12 highlight objects, and thus had a short dwell time in the Albukhary Foundation Gallery.

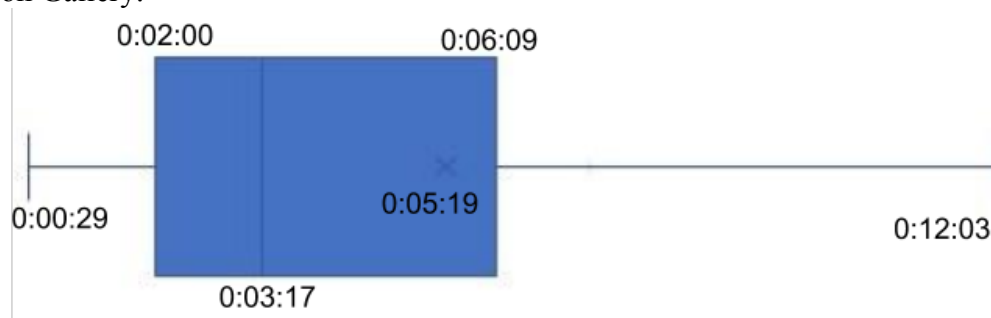


Figure 13: Box and whisker plot for overall dwell time.

Table 3: Outliers from the overall dwell time.

<i>Outlier Data</i>
0:12:34
0:13:09
0:13:22
0:14:12
0:15:53
0:18:34
0:19:43
0:21:15
0:24:03
0:30:28
0:35:43
0:50:19
0:55:24

Finding 9: New additions to the gallery were attractive to visitors

From the 110 visitors we traced, we created a heat map based on the percentage of visitors who stopped at a given display. While 78 of the visitors stopped at displays in the gallery, the other 32 visitors just walked through the gallery. When creating the heat map for the Albukhary Foundation Gallery, we used the same color scale as the heat map from the evaluation of the John Addis Gallery in order to directly compare the galleries (see Figure 14). The warmer colors indicate displays with a higher attracting power compared to the displays with cooler colors. By comparing the attracting power heat maps from the John Addis Gallery and the Albukhary Foundation Gallery, it is evident that they have similar attracting powers due to the similar distributions of colors.

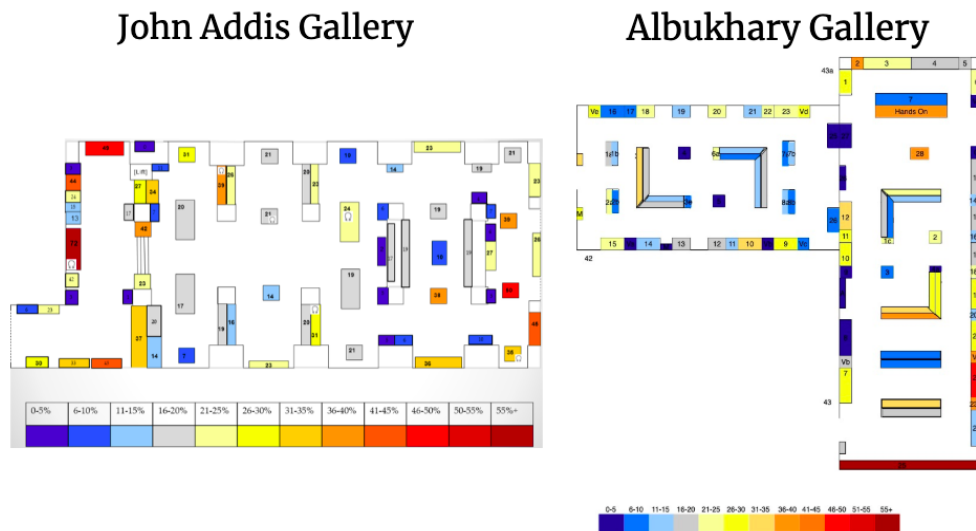


Figure 14: Attracting power heat maps for the old gallery (left) and new gallery (right).

We found that the three most popular displays in the gallery were *21 Stones*, Music and performance, and the robe, all of which are in Room 43. To see the objects in the cases, reference Appendix F. The patterns shown by the heat map align with Finding 7, which also indicated visitors spend most of their time engaging with the cases along the sides. From the bar chart (see Figure 15), the favorite displays were instruments, clothes, and works on paper, which were new additions to the Albukhary Foundation Gallery. Additionally, the most popular objects were the robe and African lyre. The visitor reported favorite displays and objects are consistent with the displays that have high attracting power. Thus, visitors are engaging with the additions to the gallery as intended by the gallery project team.

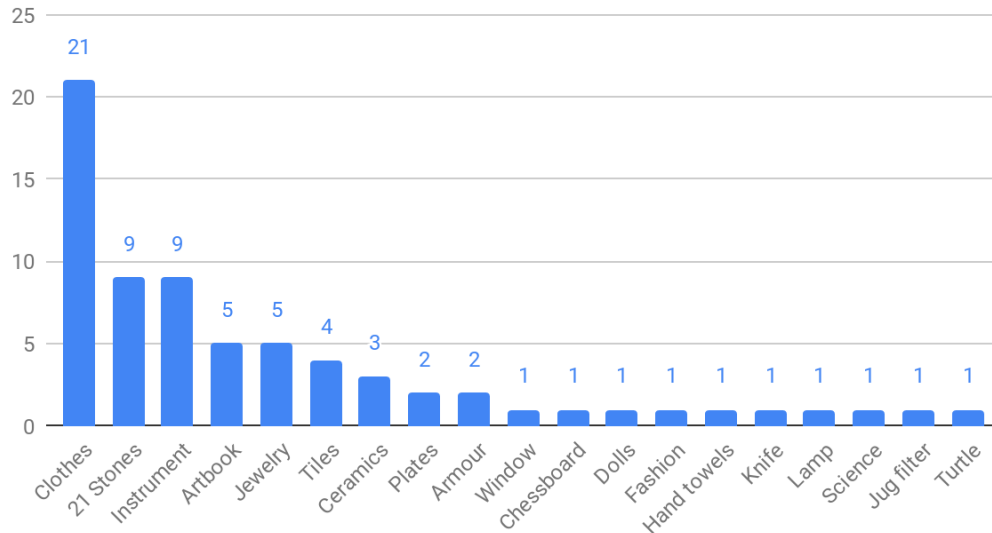


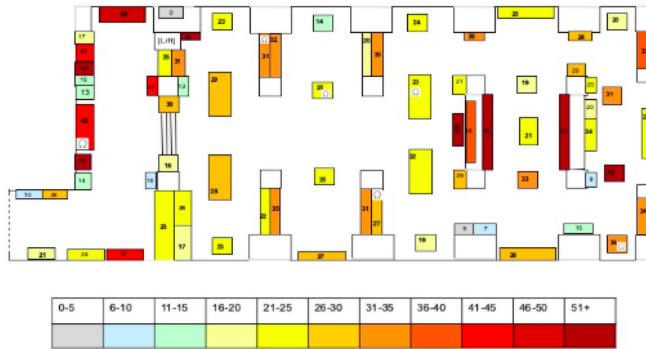
Figure 15: Bar chart of the favorite displays of visitors to the Albukhary Foundation Gallery.

In terms of the digital media in the gallery, the 37% of visitors watched and listened to the video “Traditional ‘ud performance,” which had the most number of stops of the videos in the gallery. Overall, the heat map revealed that visitors are more interested in instruments, clothes, and artwork, which is why Room 43/43a has a higher attracting power than Room 42.

Finding 10: Instruments and video / audio clips had the highest holding powers

We calculated the median dwell time spent in front of each display to create the holding power heat map (see Figure 16, right). Compared to the John Addis Gallery, the holding power of the Albukhary Foundation Gallery is slightly less, which aligns with the decreased dwell time in the new gallery. The heat map shows that the overall holding power of Room 43 is higher than Room 42 and Case 22: Music and performance has the highest holding power in the gallery. While the digital media had less attracting power compared to other displays, all of the video and audio clips had a holding power of over 45 seconds. The high holding power confirmed that visitors engaged by watching videos and listening to the audio clips. Additionally, 90% of the visitors that watched the videos reported that the videos were helpful (rated as 5 or more on a scale from 0 to 10).

John Addis Gallery



Albukhary Gallery

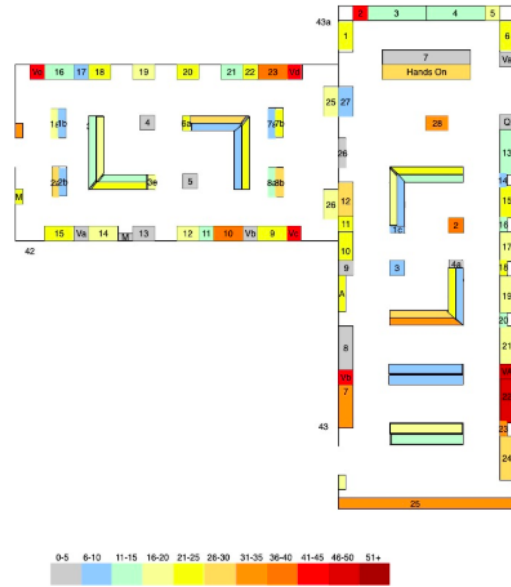


Figure 16: Holding power heat maps for the old gallery (left) and new gallery (right).

Finding 11: The most common first-cases visited were those with high attracting power

The first case visited heat map presents the first display that visitors stopped at after entering the gallery. Figure 17 shows that most visitors have their first stop either near the entrance of Room 42 or one of the displays with high attracting power.

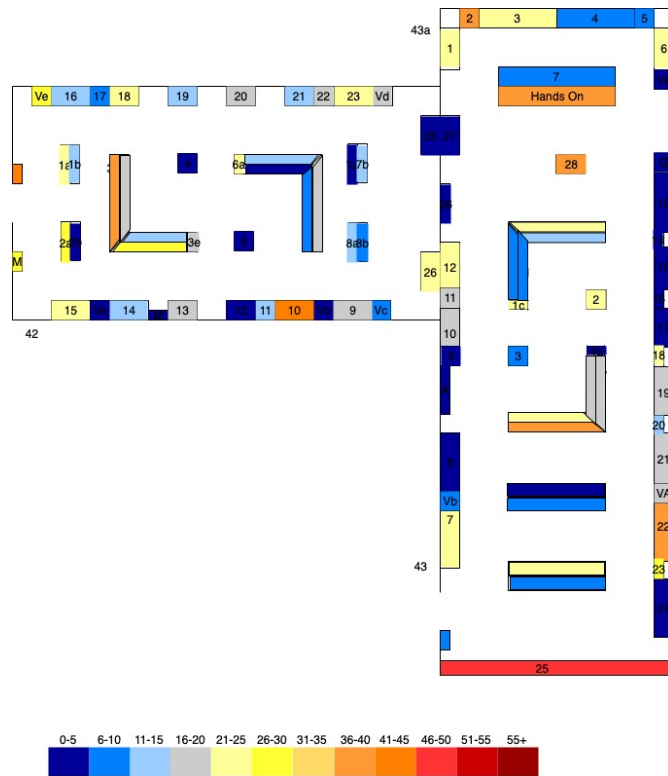


Figure 17: Heat map for first case visited.

4.3: Visitors thoughts

Besides demographic information, we asked visitors in the survey whether they read the regional map, interacted with the family labels, and changed their perception of Islamic culture. For further information from the survey, see Appendix G.

Finding 12: Few visitors read the regional map

From the survey, 66% of the visitors reported that they read the regional map about the Islamic world at the right side of the doorway in Room 42. For the visitors who read the label, 91% of them rated the map as effective (rated as 5 or more on a scale from 0 to 10). While two-thirds of visitors surveyed self-reported reading the regional map, only 3% of visitors counted read the map. Evidently, the percentage of visitors that read the regional map is inconsistent between methods based on the different sampling methods (see Figure 18). The counting data is more accurate as it reflects all the visitors during the hours counted, instead of the small sample of visitors surveyed.

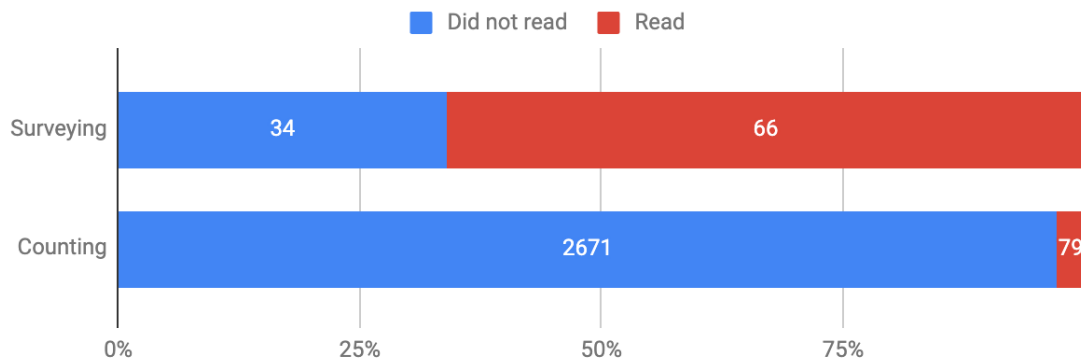


Figure 18: Stacked bar chart for how many visitors read the regional map based on two methods.

Finding 13: Few visitors utilized the family objects / labels

The objects placed underneath the general shelf are family objects since they are at the correct eye level for children. We found that few visitors noticed the family labels, even though the family labels were effective in engaging children with the gallery. Of the 36% of the visitors who noticed the family labels and objects, only one in four used the family labels (see Figure 19). All the visitors that used the family labels rated them as helpful (rated as 5 or more on a scale from 0 to 10).

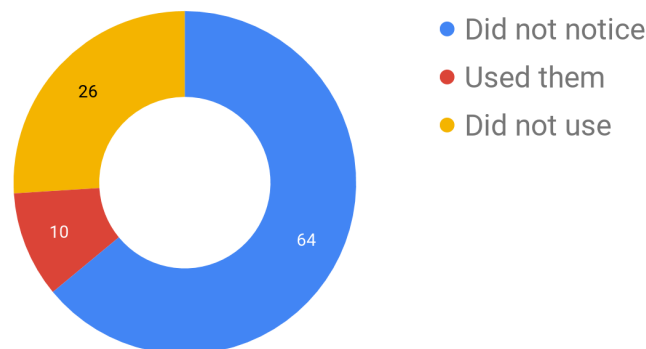


Figure 19: Doughnut chart for the use of family labels in the Albukhary Foundation Gallery.

Finding 14: The gallery changed some visitors’ perceptions of Islamic culture as intended

Our interviews with the gallery project team revealed that an objective of the gallery was to challenge misconceptions about Islamic culture by displaying objects from around the world. Since 86% of the visitors reported that they had open opinions or neutral perceptions toward Islam, they still held their opinions toward Islam. Fourteen percent of surveyed visitors reported that they felt that the gallery challenged their perceptions of Islamic culture due to the content of the gallery: the bright colors used in Islamic clothing, the diversity of art pieces and musical instruments, and the connections between Islam and other religions.

Of the visitors whose perceptions changed, they self-reported as atheists, Christians, and Muslims. As shown in the bar chart (see Figure 20), 40% of the visitors surveyed described themselves as atheists, 38% as Christian, and 14% as Muslim. The audience profile by religion is more diverse for the Albukhary Foundation Gallery than the John Addis Gallery, where half of the visitors described themselves as Muslim.

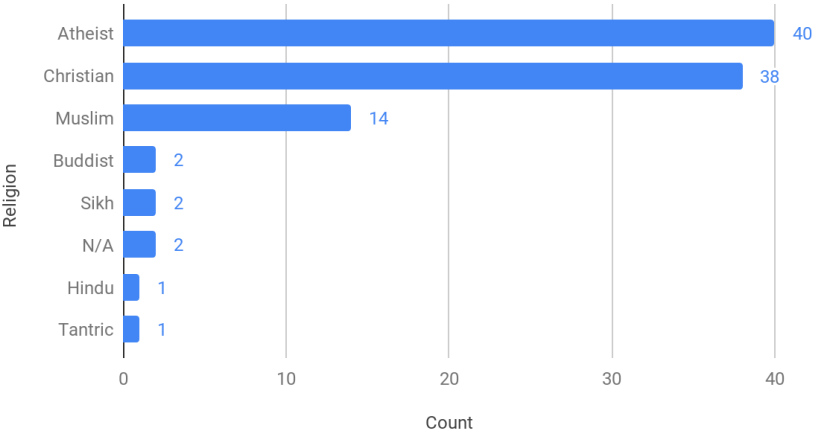


Figure 20: Bar chart of the religious affiliations of visitors to the Albukhary Foundation Gallery.

Finding 15: Visitors thought highly of the redisplayed Islamic World Gallery

We created a word cloud (see Figure 21) to present how visitors describe their experience in the Albukhary Foundation Gallery using one word. The word cloud generator scales the font size by the number of times a word occurs. Twenty-five percent of visitors used the word “interesting,” which means visitors were interested in the content of the gallery. Interest in the gallery aligns with the Albukhary Foundation Gallery’s higher than average dwell time from Finding 8. The visitors who self-reported more knowledge of Islamic culture used “comprehensive” and “informative.” In addition, we found that one of the motivations for the Interpretation team to design the gallery was to present the diversity of the Islamic world, which aligns with the word “diversity” visitors used to describe their experience.



Figure 21: Word cloud of words visitors used to describe the Albukhary Foundation Gallery.

5. Recommendations

As the Albukhary Foundation Gallery opened only eight months ago, our evaluation is the first analysis of the visitor engagement in the gallery. In this chapter, we provide eight recommendations based on our findings and literature review for the British Museum to improve the visitor engagement in the gallery without radically redesigning the content. Our recommendations relate to three areas of the gallery: facility, design, and content.

5.1: Facility

5.1.1: Add more seating to the gallery

We recommend that the British Museum provide folding chairs to increase the visitors' desire to stay in the gallery. Because the Albukhary Foundation Gallery is isolated from the cafe on the upper floor and the Great Court, both of which provide seating, visitors walking through the gallery are often tired and looking for somewhere to rest. From the survey, 16% of the visitors who offered recommendations expressed further interest in the content of the gallery and asked that the museum provide more seating in the Albukhary Foundation Gallery as they were too tired to prolong their visit beyond a walkthrough. Currently, the gallery has five benches which are usually occupied and offers no additional folding chairs for the visitors. However, if there were more seating opportunities available, visitors may be more inclined to stay in the gallery.

5.2: Design

5.2.1: Provide translations for the objects' texts

Finding 3 revealed that non-English speaking visitors strongly suggested having translations in their native languages. The translations would help non-English speakers read the labels and understand the context of the objects and displays. For example, in some display cases, the gallery project team intended to compare similar objects from different regions, such as "Egypt and Syria." However, non-English speakers could only understand the region names but not the relationship between the objects. Thus, we recommend that the British Museum translate the descriptions into Spanish, French, Italian, Chinese, and Arabic based on the gallery's visitor demographics.

5.2.2. Include detailed descriptions about the objects

From the survey, visitors reported that the object descriptions were useful in providing clear and thoughtful information about the objects. However, researchers and visitors with substantial knowledge of Islamic culture were unsatisfied with the depth of information. Since the British Museum already provides QR codes on the labels but only links to the main page of the gallery's website, we recommend that the digital project team provide QR codes linked to more information for each display. Visitors asked that the museum would "present more [information] on the label or have an application for more details." Since the gallery has its own website with detailed descriptions about each object, QR codes could direct visitors to these descriptions that already exist, but are not widely used.

5.2.3. Provide a way to view clothing from the front and back

In Room 43, there are five permanent displays showcasing Islamic clothing from different regions. Due to the limited display conditions, only one angle of the clothing is visible. Thirteen percent of the visitors that offered recommendations on the survey wanted the museum to provide a clear view of the clothing from more angles. We recommend that the gallery project team installs mirrors for visitors to view other angles of the clothing. An alternative solution is

for the digital project team to create a digital resource with a 360° view of the clothing and the ability to zoom in on the details so that visitors can have a better understanding of the clothing.

5.2.4. Make family labels clear and obvious

Surveys and observations in the gallery revealed that children found the family objects placed lower in the display cases as intended by the gallery project team when designing the family objects. However, visitors did not utilize the family labels accompanying these objects as shown in Finding 13. The labels for the family objects use a different color and font than the general gallery labels and include a picture of a magnifying lens, but are not explicitly marked as “family labels.” We recommend that the gallery project team reformats the family labels to signify there is a specially placed object and to encourage parents to engage their children by asking questions.

5.3: Design

5.3.1. Add a timeline to the regional map

The Albukhary Foundation Gallery is a gallery of material culture presented using thematic displays along the sides and chronological displays through the center (see Figure 22). However, Finding 7 revealed that it is difficult for first-time visitors to understand the flow of the gallery. Sixteen percent of people who gave recommendations on the survey were confused by the middle sections of the gallery. Even though the gallery project team designed the center displays chronologically, one of the visitors remarked that “it would make more sense if it were chronological,” indicating that visitors may not be viewing the gallery as intended by the gallery project team. The regional map, located at the entrance to the gallery, provides an overview of Islam’s geographical reach. We recommend that the gallery project team integrates a timeline with the regional map for visitors to understand both the geographical and chronological spread of Islam.

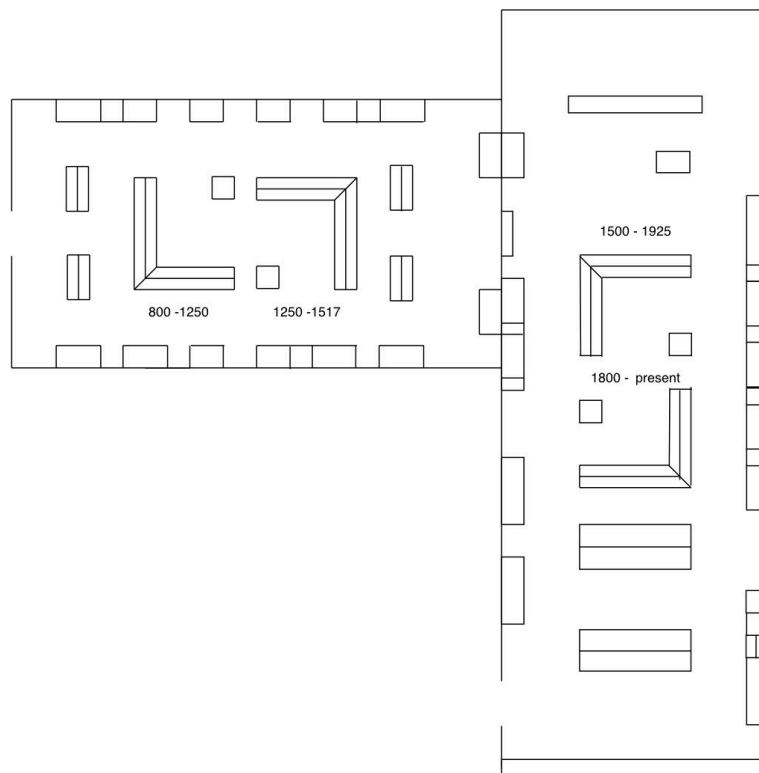


Figure 22: Gallery map annotated with the dates for the center displays.

5.3.2. Include more audio clips for displayed instruments

Currently, there are two audio clips in the Albukhary Foundation Gallery; one is accompanying a video clip, and the other is next to a bench. The audio video clip, located next to the music display with a lute, demonstrates a person playing the lute. Finding 10 revealed that visitors engaged by watching the video and listening to the audio clips. Additionally, in the music display, there are ten other musical instruments, including a flute, zither, and saz, that 9% of visitors who offered recommendations wanted to hear. We recommend that the digital project team imports video and audio clips of other instruments to help visitors understand how people play those musical instruments.

5.3.3. Incorporate a temporary display for underrepresented objects

Our survey revealed that several visitors who were familiar with Islamic culture were critical about the representation of Islam through the choice of objects. The attracting power heat map in Finding 9 indicates that visitors are interested in the works on paper. However, Muslim visitors noted that there are few Qur'an books and little calligraphy in the Albukhary Foundation Gallery. These are key aspects that represent Islamic culture and should have a greater presence in the gallery. In addition, visitors from central Asia and Morocco expressed unhappiness in the lack of objects from their native countries. While the British Museum cannot redesign the gallery to accommodate all visitor desires, we recommend that the gallery project team adds another temporary display in order to rotate in more diverse and underrepresented objects from the collection. The temporary display would give the museum the opportunity to connect with a wider audience through the objects on display from the Islamic world collection.

Conclusion

Our project assisted the British Museum in evaluating the redisplayed Islamic world collection. We interviewed the team members that designed the Albukhary Foundation Gallery to identify the purpose of the new gallery. Our evaluation of the gallery using methods of timing, tracing, counting, and surveying revealed that the Albukhary Foundation Gallery has been successful in improving visitor engagement with the Islamic world collection. While the previous John Addis Gallery had a higher average dwell time than the new gallery, the Albukhary Foundation Gallery brings in more first time visitors and reaches a younger, larger, and more diverse audience. Although the feedback from the new gallery was overwhelmingly positive, the British Museum can utilize our recommendations for practical modifications to improve the visitor experience in the gallery.

The British Museum has plans for evaluative work on specific displays in the Albukhary Foundation Gallery and will use our data to provide context for how the displays relate to the rest of the gallery. Future evaluations of the gallery can refer to our evaluation as a benchmark for the visitor engagement. By gathering information on all aspects of individual visits, the Interpretation team can capture a holistic view of a visitor's experience in the Albukhary Foundation Gallery to provide a richer understanding of how one engages with the gallery. Since we only evaluated visitors once they entered the gallery, the Interpretation team could explore the reasons why visitors look into the gallery but decide not to enter. Additionally, the Interpretation team could examine why children are so excited to enter the gallery, but the parents are often unenthusiastic. Ideally, our findings and recommendations will help the British Museum refine the visitor experience and increase visitor engagement within the Albukhary Foundation Gallery. As the Albukhary Foundation Gallery aims to show the diversity and geographical reach of Islam to challenge misconceptions of Islamic culture, we hope our evaluation contributes to the process of redisplaying the Islamic world collection and promoting the appreciation of Islamic culture.

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Appendices

Appendix A: Modifications & Additions to the Islamic World Galleries

Table 4: Modifications and additions to the Albukhary Foundation Gallery when compared to the John Addis Gallery.

<i>Modification / Addition</i>	<i>John Addis Gallery</i>	<i>Albukhary Foundation Gallery</i>
<i>Location</i>	By the back entrance of the museum	More centrally located in the British Museum
<i>Region</i>	Focused on the Middle East	From Africa to South-east Asia
<i>Objects</i>	Focused on ceramics	Ceramics, textiles, art, architecture, works on paper, musical instruments
<i>Labels</i>	Less meaningful context	More about Islamic culture
<i>Family labels</i>	None	Family labels and objects
<i>Hands On desk</i>	None	Every day 11:00 - 16:00 at the center of the Gallery
<i>Digital media</i>	None	QR codes, videos, audio clips
<i>Gateway objects</i>	None	40 gateway objects
<i>Lighting design</i>	Lighting did not accommodate light-sensitive artifacts	Room 42 uses natural lighting and Room 43 is light sensitive for textiles and works on paper

Appendix B: Gateway Objects

In most museum designs, key displays help the visitors navigate and better engage with the content. Museums can utilize wayfinding, a way of orienting individuals in physical space (“Wayfinding,” 2019), to guide visitors through a gallery and provide a theme or meaning intended by the curator (Frey, 2012). The British Museum uses gateway objects as an innovative wayfinding strategy (Bright, 2011). Gateway objects are the eye-catching objects that can draw a visitor’s attention within a gallery. Starting in 2006, the British Museum utilized gateway objects to build clear and direct relationships with the themes of each redesigned gallery. Ideally, gateway objects should be an intellectual gateway into a display, an important object in the collection, intrinsically attractive and eye-catching, and an iconic object to visitors (Bright, 2011). The connection of gateway objects not only forms a concrete storyline but also illustrates the theme of a gallery. Based on the evaluation of gateway objects in other galleries in the British Museum, gateway objects deepen engagement because visitors actually stopped to look at the objects (Frost 2017). By applying gallery design techniques, the British Museum hoped to improve the visitor engagement and understanding of the content within the Islamic World Galleries.

Appendix C: General Interview Questions

1. What is your job title?
2. How long have you been working at the British Museum?
3. What galleries have you worked on before?
4. What did you hope to improve from the John Addis Gallery?
5. What was your role for the Albukhary Foundation Gallery?
6. What do you hope visitors will take away from the gallery?
7. How would you define visitor engagement within the gallery?
8. Do you have any specific goals for certain aspects of the Albukhary Foundation Gallery?
9. Did you contribute to the digital resources, family labels, gateway objects, or Hands On desk?

Appendix D: Visitor Tracking

Visitor behavior studies can provide useful insight as to how a gallery is engaging its visitors. As engagement is not directly visible, studying the behavior of visitors is the only method to measure engagement (McIntyre, n.d.). Visitor tracking in museums dates back to the early 20th century when Arthur Melton and Edward Robinson began to make systematic observations of museum visitors, including details such as behavior patterns and right-turn bias. By the 1990s, institutions accepted visitor observation as a valid and reliable method to evaluate museums (Yalowitz & Bronnenkant, 2009, p. 47).

In 1998, Beverly Serrell, one of the most highly respected museum consultants in the United States, published *Paying Attention*, a review and summary of behavioral data collected from over 110 exhibitions in various types of zoos and museums. The publication helped standardize the way in which observers collect data and correlate visitor behaviors to the success of an exhibit (Yalowitz & Bronnenkant, 2009, p. 48). Yalowitz and Bronnenkant suggest four categories of recordable variables for timing and tracking studies based on Serrell's standardization (Yalowitz & Bronnenkant, 2009, pp. 49-50):

1. Stopping behaviors
 - a. Timed aspects of the visit
 - b. Number of stops a visitor takes
 - c. Locations of visitor stops
 - d. Actions while stopped
2. Other behaviors
 - a. Visitor's path
 - b. Socializing with others
 - c. Using hands-on objects
 - d. Viewing video and audio clips
3. Observable demographic behaviors
 - a. Estimated age
 - b. Gender
 - c. Race
 - d. Ratio of adults to children in a given party
4. Situational variables
 - a. Level of crowding
 - b. Time of year
 - c. Day of the week
 - d. Presence of staff in the gallery

While it is unnecessary for researchers to collect all of the recordable variables for each individual visitor, gathering a wide spread of information about the gallery's visitors as a whole is useful in providing context to the collected data.

Appendix E: Survey Questions

English ▾

Block 1

The survey is part of a project conducted by students from Worcester Polytechnic Institute to evaluate the Albukhary Foundation Gallery at the British Museum. This survey is completely optional. Feel free to leave any questions blank or stop at any time.

Is this your first visit to the British Museum?

Yes

No

How long ago was your last visit?

Less than a year ago

Between 1 and 2 years ago

Between 2 and 5 years ago

More than 5 years ago

Including today, how many times have you visited in the past year?

What were your motivations to visit the Islamic World Gallery? (Check all that apply)

- Walked by, no prior intention to see gallery
- Recommended by a friend or other source
- Interest in Islamic culture
- Interest in a specific object (please specify)
- Other

On a scale from 0-10, how much did you know about Islamic culture prior to your visit?

Not much at all Very much
0 1 2 3 4 5 6 7 8 9 10

On a scale from 0-10, how interesting did you find the Islamic World Gallery?

Not at all interesting Extremely interesting
0 1 2 3 4 5 6 7 8 9 10

Please use a word or phrase to describe your experience in the Islamic World Gallery.

Did you have a favorite object, display, or area of the gallery?

- Yes (please specify)
- No

On a scale of 0-10, how would you rate the information that was provided in the gallery?

Unclear or unapparent Clear and thoughtful
0 1 2 3 4 5 6 7 8 9 10

On a scale of 0-10, how helpful were the regional maps of the Islamic World in the gallery?

Not helpful at all Extremely helpful
0 1 2 3 4 5 6 7 8 9 10

On a scale of 0-10, how helpful were the video and audio clips in understanding Islamic culture?

Not helpful at all Extremely helpful

0 1 2 3 4 5 6 7 8 9 10

Did you notice the families labels and objects for families in the gallery?

Yes
 No

Did you use the family labels / objects?

Yes
 No

On a scale of 0-10, how would you rate the family labels?

Poor Brilliant

0 1 2 3 4 5 6 7 8 9 10

Did any of the displays challenge or change your perceptions of the Islamic World?

Yes (please specify)

No

On a scale from 0-10, how much do you feel your visit has enhanced your understanding of the Islamic World?

Not much at all Very much

0 1 2 3 4 5 6 7 8 9 10

On a scale of 0-10, how would you rate the design of the Islamic World Gallery?

Poor Neutral Brilliant

0 1 2 3 4 5 6 7 8 9 10

Are there any improvements or modifications you would like to be made to the gallery?

Block 2

What is your country of residence?

Please select your age group:

- 15 - 24
- 25 - 34
- 35 - 44
- 45 - 54
- 55 - 64
- 65+

Please select your gender:

- Male
- Female
- Other

What is your religious affiliation?

- Muslim
- Other

Please specify your religious affiliation:

- Christian (Catholic, Protestant, Orthodox, Lutheran, Methodist, etc.)
- Hindu
- Buddhist
- Agnostic / Atheist / No religious affiliation
- Other

With the help of native speakers, the survey has been translated into Chinese, Arabic, Spanish, French, and Italian.

Appendix F: Pictures of select objects from the gallery

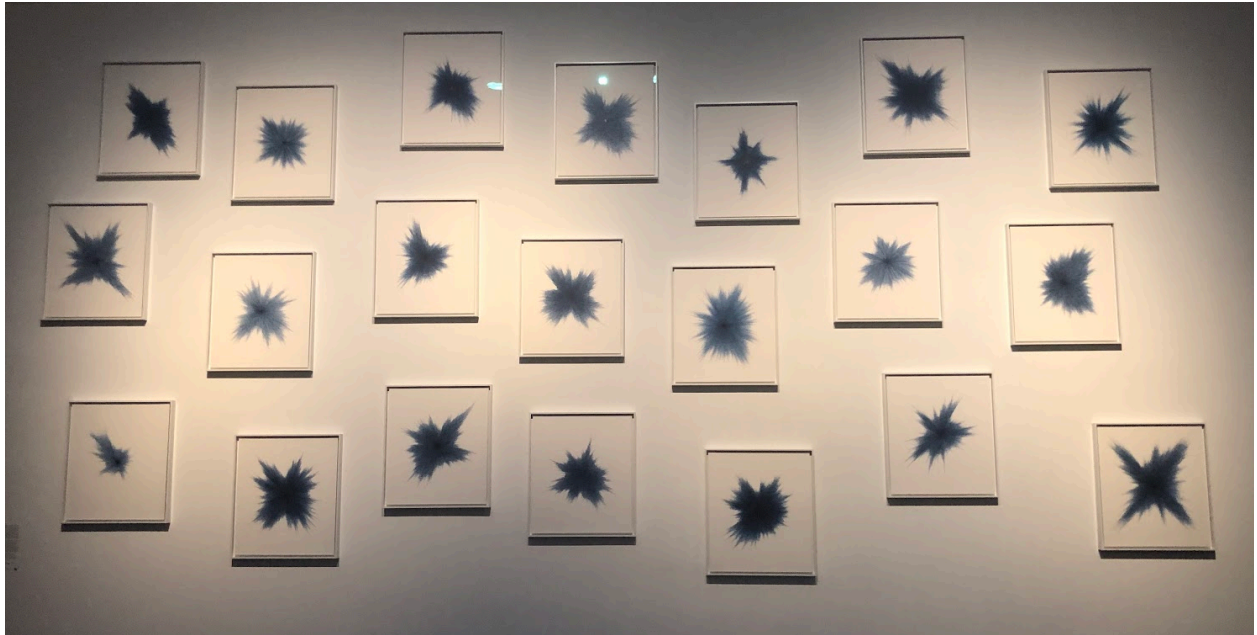


Figure 23: Paintings by Idris Khan from Case 25: 21 Stones in Room 43.



Figure 24: Arabian lute from Case 22: Music & performance in Room 43 ("The Albukhary Foundation," 2019).



Figure 25: Chess-board from Case 10: Games in Room 42 ("The Albukhary Foundation," 2019).



Figure 26: African lyre from Case 4: Islam in Africa in Room 43 ("The Albukhary Foundation," 2019).



Figure 27: Robe from Case 2 in Room 43a.

Appendix G: Additional Visitor Comments on the Albukhary Foundation Gallery

Facility

- Room should be cooler
- More benches in the room because they are tired after visiting the other gallery
- Translations for the object texts
- More QR codes for details

Object

- More Qur'an books, paintings, and calligraphy art
- Pictures for the front of clothes displayed from the back
- More audio for different types of instruments

Descriptions / Labels

- Use a family picture or some obvious symbol instead of magnifying lens to represent family labels
- Prepare large text book in the gallery about each object for those with impaired vision
- More meaningful content in the label rather than just telling the visitor what the object is