Case Study: Recommended Educational Strategy for the Fairfield Heritage Centre

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Abstract In the 21st century, museums are considered to be informal learning environments that provide learning experiences for a variety of audiences. This article analyzes research undertaken within twelve weeks in 2016 on behalf of Fairfield Heritage Centre in Govan, Glasgow. The aim of the project was to provide recommendations for the improvement of the “Shipbuilding Teacher’s Pack” content, to be employed by the museum with primary school groups in Glasgow. On-site and off-site case studies at other museums in Glasgow formed the main methodological approach for this research, and as a result, recommendations were offered to the museum. Six key themes emerged from this research: Pre-Visit Engagement, Curriculum for Excellence, Learning Approach, Risk Assessment, Post-Visit Engagement, and Methodologies for Evaluation. These suggestions were provided to Fairfield Heritage Centre on the 16th of August 2016. Formative evaluation was implemented for the first developed workshop Ship Design, and tested with Ibrox Primary School on the 19th of August. Lastly, final recommendations were provided to Fairfield Heritage Centre based on the results of the evaluation session.

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Fairfield Heritage Centre

In the 21st century, museums carry an active role in local communities and in urban regeneration. As such, the Fairfield Heritage in Govan, Glasgow is an important place for representing the identity of the local Govan community. In 2001, the Fairfield building was in terrible condition - the Grade A-listed structure had fallen into such serious disrepair that it was placed on Scotland’s Buildings at Risk Register. In 2007, a charity organization Govan Workspace together with the local Govan community took the initiative for the redevelopment of the Fairfield building. Govan Workspace applied for funding from various public and charitable bodies for the development of the structure into a “hybrid of business and heritage space.” As a result of the £5.8m renovation program, the building opened in 2014.

Historically, in the nineteenth and twentieth centuries, the river Clyde in Glasgow was the center of the shipbuilding industry. At the time of the first World War, there were over 40 shipyards on the Clyde that employed over 100,000 people. For more than 50 years, Govan was the elite workshop of the world for the construction of metal propulsion ships. The
Fairfield shipyard was considered to be the most significant yard along the river producing the “finest, largest and most beautiful ships of the era,” including merchant ships and naval vessels for the First and the Second World Wars. As the main employer in the area for many generations, there is scarcely a family living in Govan today that does not have a connection to the yard. The story of the yard is inseparable from the social history of the community. Therefore, Fairfield’s renovation project was significant not only for its remarkable architecture but also the rich historical associations which encapsulate Govan’s greatness.

In the wake of this history, this research aims to renew Fairfield’s educational approach by providing a new perspective for developing educational programs. In this regard, the study suggests theories and methods for developing a new teacher’s pack for primary schools.

Permanent Display Galleries

The permanent display at Fairfield is a representation of the heritage of shipbuilding in Govan, particularly at the Fairfield Shipyard from its founding to the present. Divided into five halls, the permanent display focuses on the following themes: The Story of the Clyde, Fairfield and Her Ships, Managing Director’s Office, and Fairfield and the World. The permanent exhibition starts at the reception hall with an introductory film representing the history of the Fairfield building and its renovation project. This room also contains a map of the river Clyde, “Shipyards on the Upper Clyde,” illustrating the great variety of shipyards located along the river since 1907. This visual image also includes technical information regarding the change in ownership of the shipyards. Lastly, visitors can see a replica of a world’s first compound marine engine created by marine engineer and founder of Fairfield shipyard, John Elder.
The next exhibition hall, *Fairfield and Her Ships*, narrates the story of merchant and warships built at Fairfield during World War I and World War II. Contrastingly, the *Managing Director’s Office* discusses the development of the yard during the post-war years. Finally, the last exhibition gallery, *Fairfield and the World*, examines the global dimensions of the shipbuilding industry.

Exhibition content is presented through didactic texts and media such as photography and film footage. Fairfield extensively incorporates digital technology to create an interactive exhibition experience. For example, each exhibition hall contains at least one touchscreen where visitors can experience tactile engagement, developed in collaboration with the digital design studio in the Glasgow School of Art. However, less emphasis has been put on physical objects. In fact, there are very few artifacts compared to the amount of text panels and photos in each exhibition area. The reason for this is that Fairfield has a smaller collection of objects compared to the large number of images in their photographic archive. For example, the greatest number of artifacts on display are shipbuilding tools, such as the pneumatic riveter, grinder, spanner, and others. In addition to physical tools, the display contains large ship models built at Fairfield, such as *Al Mubarakiah* (1974), *Circassia* (1937), and *Lahn* (1887).
Fairfield Heritage Centre is a community museum that relies upon the work of volunteers. In 2016, the educational activities in Fairfield Heritage were created and delivered by two learning volunteers. The lack of staff in the education department created an opportunity to work with a Museum Studies master’s student in order to improve their museum education strategy, specifically the “Shipbuilding Teacher’s Pack.” The pack included information on how to access the museum and activities provided for school groups.

Designing an Educational Strategy

This study was based on qualitative methodology as it best enables the participants to express their thoughts regarding their participation in an educational program. The main methods used were participant observation and semi-structured interviews. Participant observation was preferred because the researcher was able to support the implementation of the educational program as a learning assistant. Groups of school children were observed on-site at Fairfield in the “Rents, Rivets and Tatties” exhibition workshops, which was dedicated to the role of women in the munitions factories and shipyards during the 1915 Rent Strikes. Interacting with and observing a program allowed the researcher to thoroughly evaluate the strengths and weaknesses of each program.

Formative evaluation was also applied. Greenhill stated that evaluation is an essential part of the process of designing and developing education programs - before designing a pack, it is important to evaluate it among teachers using the draft version. Therefore, a formal learning environment was researched with an aim to understand the educational experience of the project’s audience. For this, a semi-structured questionnaire was developed for the teachers centered on three themes: Teacher’s Pack, which asked questions about the effectiveness of the current educational pack provided by the museum; Primary Education, to understand more of what is currently taught in the classroom; and Museum Experience, to gather feedback about prior museum visits and evaluate what worked or didn’t work well on school visits. Additionally, site visits were conducted at St. Saviour’s Primary School in Govan to
better understand the current structure of classroom lessons and design a pack that met the needs of the teachers and curriculum.

According to Talboys, research should also extend to other museums which deliver educational programs in order to “understand what they provide, both generally and specifically, to their educational users.” To evaluate the wider educational approach and understand the role of Fairfield among other museums, interviews were conducted with three museums that exhibited similar content: The Tall Ship at Riverside, the Riverside Museum, and the Scottish Maritime Museum.

**Recommendations to Fairfield Heritage Centre**

As a final result of this study, recommendations were provided for improving the “Shipbuilding Teacher’s Pack” and workshops at Fairfield Heritage Centre. These suggestions were distributed into six key themes: Pre-Visit Engagement, Curriculum for Excellence, Learning approach, Risk Assessment, Post-Visit Engagement, and Methodologies for Evaluation.

**Pre-Visit Engagement**

After familiarization with the “Shipbuilding Teacher’s Pack,” it was evident that the education booklet did not contain enough information to prepare teachers for their visit. Therefore, it was recommended to include a Pre-Visit section to the pack including the following information:

- Booking form providing information on how the teacher can book the museum visit and an invitation for the teachers to visit the museum beforehand in order to familiarize themselves with the museum collections. Additionally, the pack should include a map of the museum and its surrounding area.

- Information regarding museum facilities (disabled access, toilets, catering facilities, shop). The draft of the “Shipbuilding Teacher’s Pack” already included information about wheelchair access. However, it was recommended to also include the availability of disabled toilets. It was suggested to add that the museum does not contain any catering facilities, such as the café, which requires the school group to provide their own lunch.

- Fact sheet about Fairfield Museum highlighting the key events in its development. This enables teachers to familiarize themselves with the museum and its collections.

- Visual resources, from the museum’s photographic archive. A suggestion was made to provide teachers with the laminated map of Govan shipyards displayed on the digital screen in the first gallery. This image illustrates how Govan looked in the past and helps bridge to present times, highlighting that Fairfield has remained as the only shipyard in Govan.

- Recommendations for schools for pre-museum visit activities. Scott Mowat, the Principal Teacher at Ibrox Primary School, proposed that pupils’ research skills could
be developed as part of the Technology class. For instance, children at school can be given the task to find information about shipyards in Govan. This can be followed by drawing a poster based on their research results and presented to classmates.

**Curriculum for Excellence**

For developing the educational sessions at Fairfield, the *Scottish Curriculum for Excellence* was applied. The *Curriculum for Excellence* is a national curriculum launched in 2004 for Scottish schools for learners from age 3 to 15, highlighting the aims and outcomes of different school subjects. During the interview, Scott Mowat emphasized that the *Scottish Curriculum for Excellence* is the first and most important starting point for developing any educational program for schools. Above all, Mowat stated that Fairfield’s educational pack was too difficult for pupils at Primary First level (P1-P4). The appropriate school level is most likely to be Primary Second level (P4-P7); the “Shipbuilding Teacher’s Pack” was modified using the codes for the Second level. Mowat highlighted that the learning outcomes presented in the teacher’s pack draft were too general for teachers and, as such, did not link directly with the *Curriculum for Excellence*.

To improve the pack, direct links with the curriculum areas and learning outcomes were incorporated. Mowatt also suggested that no more than three subject links should be integrated with the program. As a result of this meeting, the *Curriculum for Excellence* was researched in detail and suggestions were made for direct links for all of the three workshops presented in the education pack. Among all the curriculum areas, three key subject areas (Languages, Expressive Arts, Social Studies) were selected as their learning outcomes seemed to have strongest connections to the shipbuilding pack activities. As the *Curriculum* emphasizes learning beyond subject boundaries and the importance of interdisciplinary learning, at least two curriculum areas were integrated with each of the provided workshops.

**Learning Approach**

In order to develop successful learning activities, it is important to be aware that each child is different by age, ability, and cultural background. Every individual has a different way of gaining new knowledge about the world. As such, educational activities in museums need to accommodate various learning styles. There are several learning theories developed by specialists that provide explanations for how children develop and learn, which have become important in the construction of educational programs. Multiple Intelligence Theory, developed by psychologist Dr. Howard Gardner in 1983, was applied to the “Shipbuilding Teacher’s Pack.” This theory is considered one of the most cited theories in the construction of education programs in museums. For this study, Workshop 1: Ship Design was developed in detail. The key learning outcome was for pupils to become aware of the ships produced at Fairfield and the vocabulary of the exterior design of a ship. In addition, the children would become designers and have the chance to design their own imaginary ships.

Based on Gardner’s Multiple Intelligence Theory, it was suggested to integrate the following intelligence types into Workshop 1: Ship Design:
• **Verbal-Linguistic:** A child who thinks in words and learns best through activities involving talking, writing, reading. For this intelligence, a vocabulary sheet called "My Ship Design Glossary" was developed that aids the learning of ship parts by writing down the new words and their definitions.

• **Visual-spatial:** A child who thinks in images, colors, and shapes and learns best through activities involving visualization. To accommodate this intelligence, children were taught about ship design visually, by using laminated photographs from the museum’s archive. These were images represented different ship exterior and interior parts. After learning about ship vocabulary, the pupils were told to draw their own imaginary ship, which would enhance their creativity. Also, suggestions were provided for adding more imagery into ship design PowerPoint, making the presentation less academic and more child-friendly.

• **Bodily-Kinesthetic:** A child who thinks in action and movement and learns best through participatory activities. For this intelligence, it was recommended to integrate ship models on display into the introduction part of the workshop and create more hands-on activities into the workshop. For instance, new ship models can be ordered for children to handle and learn about ship design.

• **Logical-Mathematical:** A child who thinks in abstractions and numbers, systems, logical thought, and learns best through logical diagrams and problem-solving activities. To accommodate this intelligence, it was recommended to develop a timeline of a ship’s life (ordering, construction, launch, fitting-in) in order to enhance a child’s logical thinking and problem-solving skills.

![Figure 5: Ibrox pupil showing her imaginary ship design "The Warda Ship."](image)

**Risk Assessment**

For school children visiting the museum, it is essential on a practical level, to consider their safety through risk assessment. Risk assessment identifies things that may cause harm to pupils during their visit to the museum and provides measures to be taken to effectively eliminate or control the potential harm.
For developing the risk assessment, off site-visits were conducted to other museums, including the Scottish Maritime Museum. After interviewing the Education Officer, and evaluating their “Education Pack,” a risk assessment was developed for all the workshops in the “Shipbuilding Teacher’s Pack” at Fairfield (Table 1). Risks were highlighted for three museum areas: the Fairfield building, the museum grounds, and the learning room. Some of the potential risks for pupils during the educational sessions include minimal risks like cuts, bruises, and glue marks on the skin. However, other potential risks that may occur include pupils getting lost in the building, unsupervised contact with members of public, or another emergency in the building such as a fire. Teachers and museum staff should be identified by badges or another kind of apparel, and teachers should brief pupils beforehand on what to do if they are separated from the group and where to go in emergency situations.

Post-Visit Engagement

Ambrose and Paine indicate that a museum visit should be followed by further work at school.22 As a result of this study, the researcher addressed the importance of post-visit engagement. Just as quality pre-planning is essential to the success of a field trip, planning for appropriate follow-up activities will help to review and reinforce what the students have learned at Fairfield. There are several methods for engaging children after their museum visit. The researcher suggested applying creative writing in the classroom which encourages students to use the knowledge they gained at the museum and stimulates their imagination. For example, pupils can name their imaginary ship that they drew at the museum and write a story describing where the ship goes, what it carries, and imagine who is on board. Another potential activity would be to allow pupils to curate their own art exhibition. Students could become museum curators and display their drawings in the classroom, and then present them to other students with their creative stories. This type of activity would allow students to creatively reflect on their museum visit.

Methodologies for Evaluation

Evaluation is a powerful tool for shaping and improving the way a museum achieves its objectives. It provides invaluable information about the experiences of the audience regarding museum programs and helps the museum revise the content and methods of educational programs according to the needs of the participants. Traditionally in evaluation research, the opinions of teachers have been the central focus. However, recent research has indicated that while evaluating the effectiveness of learning activities it is important to consider not only the perspectives of teachers but also take into account children’s opinions.23 In the wake of these trends, this study assessed the perspectives of teachers as well as pupils regarding their participation in Fairfield learning programs. Evaluation of the museum visits provided material for improving the content of the developed ship design workshop.

Applying mixed evaluation methods, first, students were asked to self-rate how well they have performed in a certain task. The researcher applied the traffic light technique as one of the most common methods in project management for evaluating the success of the project,24 but also largely used in classroom assessment.25 At the end of the workshop, pupils were provided with a red, yellow, and green paper. On the red sheet, they were asked to write what they did not like in the session, the yellow sheet was for what was alright but could have been
better, and the green sheet indicated what they liked the most. This evaluation method provided very limited feedback as participation in the evaluation activity was very low among children. The majority of pupils did not write any feedback on their red and yellow papers. The greatest response rate was for the green sheets with responses like: “I liked designing a ship,” “I like drawing my boat,” “I liked all!” The results of this evaluation session indicated that the children enjoyed the workshop, especially the creative activity.

Feedback was also gathered from schoolteachers. For example, Claire Taggart, a teacher at Ibrox, provided written feedback on the ship design workshop. Taggart explained that the pupils enjoyed being in the authentic environment of shipbuilding and enjoyed designing their imaginary ship. Additionally, Taggart said that prior to the workshop, the class explored shipbuilding in Glasgow and the impact shipbuilding had on the world. In class, pupils were asked to research jobs carried out at shipyards and famous ships built on the Clyde. Before coming to the museum the pupils already had a prior knowledge of shipbuilding. This pre-museum preparation allowed for greater engagement by the pupils. During the museum excursion and workshop, children were actively listening and were very knowledgeable in answering questions about ships being built in Fairfield during the Second World War.

**Conclusion**

Fairfield Heritage Centre was very positive about the recommendations provided to them following the study. For example, Abigail Morris, the Fairfield Coordinator, described them as “good ideas for different elements of workshops” and “thorough research into the practices of other similar museums.” Above all, the museum stated that it was interesting to view the educational work of Fairfield from the perspective of the latest museum theory including the Multiple Intelligence Theory, which was applied for all three workshops and provides new ways to develop their educational approach. However, limitations were highlighted by Fairfield including, a lack of staff, time pressure, and budget constraints. Overall, the study was seen as a valuable exercise and Fairfield Heritage will take the suggestions and preparatory work for the next teacher’s pack.

This study, being of an exploratory nature, raises a number of opportunities for future museum research, both in terms of educational theory and practice. It has suggested practical methods for developing a teacher’s pack and could be a useful insight for museum educators. More studies will be necessary to refine and further elaborate on these findings in the museum education discipline. This study could be extended to other museums in order to evaluate their education programs, and further research could elaborate, for example, on how to apply pre- and post-museum activities, and opportunities for implementing these methods.

**List of Figures**

Figure 1: Fairfield Heritage Centre main building in Govan, Glasgow. Photo by Fairfield Heritage Centre.

Figure 2: Ibrox pupil exploring a copy of a Model-3 Cylinder Compound Marine Engine designed by John Elder and Co. in 1875. Photo by Fairfield Heritage Centre.

Figure 3: Visitors exploring The Story of the Clyde exhibition room at Fairfield. Photo by Fairfield Heritage Centre.
Figure 4: Visitors looking at a digital screen in the Managing Director’s Office. Photo by Fairfield Heritage Centre.
Figure 5: Ibrox pupil showing her imaginary ship design "The Warda Ship." Photo by Fairfield Heritage Centre.

Table 1: Risk Assessment for Workshop 1: Ship Design.

<table>
<thead>
<tr>
<th>Area/Situation</th>
<th>Potential Risk</th>
<th>Useful Information/ Description</th>
<th>Risk Avoidance</th>
<th>Risk Level (if risk avoidance advice followed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Museum Grounds; Learning Room</td>
<td>Cuts, bruises on the hands</td>
<td>Using scissors might cause smaller injuries</td>
<td>Museum staff and teachers to supervise children how to handle scissors safely</td>
<td>Low</td>
</tr>
<tr>
<td>Museum Grounds; Learning Room</td>
<td>Glue marks on the skin and table</td>
<td>Improper use of the glue can leave the hands dirty</td>
<td>Museum staff and teachers to supervise children how to use the glue without leaving any glue marks on their hands</td>
<td>Low</td>
</tr>
<tr>
<td>Fairfield Building</td>
<td>Lost children</td>
<td>The museum is a large area, pupils should always be within the sight of the teachers and museum staff</td>
<td>Museum staff is identifiable by identity badges/apparel. Teachers should brief pupils on what to do if they are separated from the group and get lost in the museum.</td>
<td>Low</td>
</tr>
<tr>
<td>Fairfield Building</td>
<td>Unsupervised contact with members of the public</td>
<td>Toilets are accessible for all the people in the building.</td>
<td>Teachers to supervise children in toilet areas (not inside cubicles).</td>
<td>Low</td>
</tr>
<tr>
<td>Museum Grounds</td>
<td>Fire/Smoke</td>
<td>Loud fire alarm going off to warn everyone. Teachers/workshop leaders should guide the group out of nearest emergency exit</td>
<td>Details of emergency exit and fire extinguishers attached to Risk Assessment Document. Teachers are encouraged to visit the museum before to familiarize</td>
<td>Low</td>
</tr>
</tbody>
</table>
and assemble at pre-arranged area. themselves with locations of fire exits and extinguishers.

Notes
3 Ibid.
4 “Map of the Clyde,” (Glasgow: Fairfield Heritage Centre and Govan Workspace, 2014).
6 Ibid.
7 Fairfield Offices and Heritage Project Updated Interpretative Plan, (Glasgow: Govan Workspace, 2012).
12 Ibid.
16 Ibid., 61.
17 Ibid.
19 Multiple Intelligences: Upper Primary Book.
20 Ibid.
21 Ibid.
22 Ambrose and Paine, Museum Basics, 67.

References


