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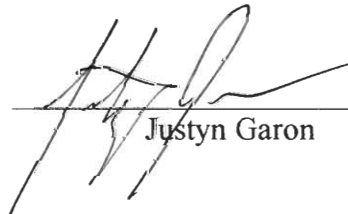
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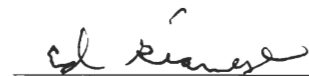
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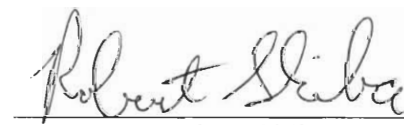
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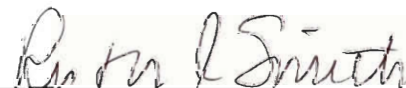


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Abstract

The Royal Armouries at HM Tower of London is aware that some teachers and students that tour the Tower do not make use of the Education Centre. They sponsored this project to assess the effectiveness of promotional and development strategies for this Centre and the usefulness of its programmes. The assessment was carried out through surveys and interviews. We concluded that web registration, student tours, and an expanded staff would enhance the interactivity and accessibility of the Education Centre.

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1.0 Executive Summary

The Royal Armouries at HM Tower of London asked us to evaluate the promotion and value of the Education Centre to schools in order to discover possible improvements in public relations and programme development. Our goal was to determine how teachers learn about educational programmes and whether or not they feel that a visit to the Centre is beneficial to the students. After research into operations of the Centre, similar museums, and survey techniques, we chose to distribute two questionnaires to teachers visiting the Tower with their students.

The questionnaires covered two main goals of the project, and were created with reference to survey method research and earlier surveys performed at the Tower. The general questionnaire, distributed to all teachers as they entered the Tower, asked questions about how they learn of educational programmes and what factors are included in their decisions to utilise these programmes. The second questionnaire was given to teachers utilising the Education Centre at the end of the workshops. This assessment survey asked questions meant to gather information about teachers' satisfaction with the lesson. These surveys helped us to gain new information for the Centre to use as a reference while their programmes develop further.

From the 215 general questionnaires we distributed, a total of 107 completed surveys were received. The data collected emphasises proximity and ease of access as key points that affect the attendance of the Education Centre. The first trend we found was that travel time is an important factor in a teacher's decision whether or not to attend the Centre. A teacher has limited time during the day, and any tour must share time with travel to the site. Teachers from distant countries only have time for a short visit to the

Tower and, therefore, do not book a lesson. A second consideration is the budget of the school. Currently, the Education Centre offers workshops that are included in the price of admission to the Tower. The instatement of an additional fee for a workshop would deter some teachers from utilising the service.

Several interesting trends in the general questionnaire were in regards to accessibility and promotion. A large percentage of teachers indicated that they would make use of a web registration page for the Centre if one were available. With a rearrangement of scheduling procedures and a remodelling of the current web page, this web registration could become a reality. Another issue that the questionnaire exposed is that knowledge of the Centre has been spread primarily by discussion among colleagues who have experienced workshops first-hand. Only a small group of teachers learn of the Centre through publication and the Internet. One possible remedy for this situation is for the Tower to create a database of schools. This would enable them to send out mailings and special offers to teachers in order to stimulate interest in the Centre and the Tower. A third issue is that schools in England and France are receptive to the idea of an outreach programme. An outreach programme allows students to experience lessons about the Tower through visits to the school by staff members. Such a programme is also valuable because it creates publicity for the Education Centre and helps to build relationships with schools.

The Education Centre assessment questionnaires have shown that most teachers would like more time spent on children's activities and less time spent on lecture. This is especially the case for optional sessions that require a fee. It is apparent that teachers who are dissatisfied with the amount of interactivity do not feel that the lesson was of

good value. We explored two methods of increasing interactivity during visits to the Tower. One is to expand the time devoted to hands-on activity during the workshop. The second is to offer a guided student tour of the Tower sponsored by the Education Centre. This tour would increase the educational value of the visit while ensuring proper supervision of the students.

These recommendations are based on the knowledge that the Education Centre will be expanded and improved. The new Centre will have the ability to accommodate three classes of 30 students at one time. With more room, it will be desirable to employ more specialised staff such as science teachers who could emphasize history and use of materials, French speaking teachers, and infant teachers. This new staff will allow for new foci for the programmes than were possible before, thereby strengthening the value of the Education Centre.

The Education Centre at HM Tower of London has a valuable education programme with much potential. This potential is being maximised through the current plans for expansion. These plans can be complimented by further developments in services and promotional strategies. The recommendations included in this report are intended to improve the programs, accessibility, and visibility of the Education Centre.

2.0 Introduction

HM Tower of London is currently a museum that educates the public about the history of England (Magee, 2000, p.8). Throughout history, however, it has served purposes ranging from a place of refuge for kings under opposition to a storage facility for weaponry and armour. During many of London's rebellious times, kings would retreat to the Tower for protection from hostile groups. The Tower actually began as a fortress called the Great (later White) Tower. William the Conqueror built it during the 11th century as a command post for the defence of London and as a political statement indicating his wish to impress the citizens of London with his power. The influence of the fortress was enough to ensure that any party in control of the White Tower was in control of England.

The Historic Royal Palaces oversees the care and operation of HM Tower of London. The Royal Armouries is the National Museum of Arms and Armour and it operates in several cultural sites in the UK. This organisation also directs the Education Centre to provide a programme that aids in the cultural and historical development of students and supports the National Curriculum. This National Curriculum is a set of standards, developed by the government, to structure the education of students between the ages of five and fourteen.

The Tower of London is a valuable resource for interactive learning in an historic setting. The Tower of London's Education Centre supplements the education that students obtain in the school systems of England. Its various lesson plans are compatible with age groups ranging from pre-school to adolescence. The primary issue affecting the Centre is that many teachers are unaware of it. One of our goals, in co-operation with the

Royal Armouries and HM Tower of London, was to determine how the accessibility of the Education Centre to its potential users could be improved. A second goal was to obtain a general assessment of the quality of the Education Centre from teachers who attend the workshops. In addition, we discussed how potential adjustments in the operation of the Education Centre could maintain continuous satisfaction and increase the number of new and returning visitors.

To accomplish our goals, we developed a general questionnaire for all teachers visiting the Tower and an assessment questionnaire specifically for teachers using the Education Centre. We distributed and collected these questionnaires at the Middle Drawbridge, where student groups enter the Tower, and at the Centre itself for the first three weeks that we were on site. The information yielded from these surveys helped us to ascertain the number of teachers who do not know about the Centre and the reasons that this is the case.

From preliminary analysis of the questionnaires, and observation of student groups interacting with the Tower staff, we explored ideas to improve the overall educational experience of students. Interviews with our liaison and the scheduling department clarified the feasibility of developing additional educational tools and promotional methods based on the upcoming expansion of the Education Centre. Ultimately, all of the data gathered from questionnaires and interviews helped us to determine how well the Education Centre is promoting itself, reasons why some teachers choose not to take advantage of its programmes, and areas for improvement. The Royal Armouries will be able to use our findings to make adjustments in operations, improve

promotion strategy, and expand what the Education Centre can potentially offer as a result of its renovation.

The planning, execution, and results of this project are presented in the form of our Interactive Qualifying Project (IQP). According to WPI's Douglas Woods, "An IQP at WPI is a project which deals with the relationship between technology and society" (Woods, 1999, p. 7). We worked with a museum that offers society a look into the history of technological advances in arms and armour in England. Our goal was to show how current technology, such as the Internet, could be used to make for a higher quality learning experience for all visitors to the Tower. Our research will help the Centre to use of the technology of today to succeed in the goals it has set to educate society about the technology of yesterday.

3.0 Background

3.1 History of HM Tower of London

Throughout history, the Tower of London has served a number of different functions including a fortress, armoury, royal palace, mint, public record office, and prison. The Education Centre at the Tower is dedicated to teaching visiting students about its significance in English history. William the Conqueror began what is currently known as the Tower of London with the White Tower during his reign from 1066 to 1087 (Historic Royal Palaces (HRP), 1999). The White Tower was one of three fortresses William built along the River Thames (Magee, 1999, p. 8). A primary use of the Tower for William and his successors in the 1100's was as an impregnable fortress for the Royal family to retreat to during times of hostility and political instability.

William Longchamp, Chancellor to Richard I, was the first person to put forth an effort to build up the initial lone White Tower into the fortress it is today. He began by building a new curtain wall on the southwest side and a moat, which was not successfully filled (HRP, 1999). Richard's successor and brother, King John, often used the Tower for refuge to deal with opposition in his kingdom. Little was seen in terms of further development of the Tower itself until the next king, John's son, Henry III (1216-72), took the crown. King Henry built a large curtain wall enclosing the east, north, and west sides which previously had consisted of an ineffective moat. Nine towers were built along the wall with the strongest ones at the corners (HRP, 1999). Henry's son, King Edward I (1272-1307), picked up where his father left off. Edward built a second curtain wall around the existing wall to create England's largest and strongest concentric castle (a castle with one line of defence within another). He also built a Royal Mint inside the

castle and began using the Tower to store records. In 1307 the Crown jewels were moved from Westminster Abbey to the Tower.

From the reign of King Edward II (1307-27) on, the Tower saw few major improvements (Hibbert, 1971, p. 58). However, it did see a change in purpose. After the Battle of the Roses ended in 1487, the Tower became a prison for a large number of religious and political figures. The Tower would see its use as a prison maximised under the Tudors. Even two of King Henry's wives were imprisoned there.

A garrison was added during the break out of a Civil War under King Charles I (HRP, 1999). After the war ended, the use of the Tower as a prison began to decline. The Office of Ordnance took over responsibility for the Tower and made it into a military headquarters. This marked the beginning of the Tower's use as a weapons and artillery storage facility. Between 1700 and 1900, the Tower was transformed from a storage facility to a tourist attraction. After a series of fires and reconstruction of buildings, it became less of a stronghold and more of a museum. Visitors to HM Tower of London can now tour galleries and buildings devoted to various aspects of the past.

3.2 Museums and Education Centres

The Department of Education and Employment (DfEE) in the United Kingdom has taken a positive approach to what museums can offer students (Department for Culture, Medium and Sport (DCMS), 2000). The DfEE has carried out several case studies that support the benefits of having children interact with museums in ways that promote the National Curriculum. A museum has the ability to connect with students in a way that textbooks cannot. It offers an interactive approach where pupils can view and

handle historical artefacts that mould the culture in which they live. Museums, such as the Tower of London, have created programmes that offer tours and workshops that give the students a closer look at the exhibits than the standard visitor receives.

The DfEE believes that museums are not only a resource for history, but also provide educational programmes that build teamwork and communication skills among students (DCMS, 2000). The government has established goals to maximise the educational value of the nation's cultural resources. This means that the government has set its priorities towards education. Accordingly, museums create objectives that adopt education as the core of their programme. They develop standards for a universal delivery of educational services and form partnerships with other museums. The Tower of London delivers an Education Centre with a programme that incorporates the goals of the DfEE and that of the National Curriculum.

The National Curriculum is a programme developed by the United Kingdom to aid in learning for students ages five to fourteen (DEE, 2000). This programme establishes four main goals that help to achieve a successful learning community. The first goal creates an entitlement, which guarantees that students learn the information needed to lead a successful life in the UK. The Educational Centre's focus on history provides students with knowledge of their cultural background. In addition, the National Curriculum allows every student the chance to learn the same information. The programme also strives to promote continuity and coherence, giving the students the skills needed to continue life-long learning. Finally, the National Curriculum aims to promote a public understanding of what children are being taught, so that they can make use of this knowledge.

The Education Centre is set up by the Royal Armouries to provide a programme to teach students through exhibits and workshops. The programme caters to students ranging from five to fourteen years old, which correlates with the figures of the National Curriculum. The workshops are organised to teach students about the history and significance of the Tower and its collections. These programmes involve students in activities that range from a protective gear lesson given to young children to a lesson on the construction of the Tower given to older children. The interactive lessons give a concrete feel to otherwise abstract mental images of history. Some classes, such as the Tudor Monarchy of the 16th century, take a look at the Tower in a specific period of time (A Great Place To Learn, 2000, p. 4). Other workshops focus on exhibits at the Tower, such as the Crown Jewels and the collection of armour. This enables the programme to link art and culture with technology and craft by showing the students how society impacted the evolution of arms and armour (HRP, 1999).

In order to assess the Education Centre at the Tower for promotional strategy and quality, research of education programmes at other museums was required to gain perspective. An important consideration in choosing these museums was whether or not they had successful education programmes that offered ease of access to multiple interactive activities. In addition, it was desirable to locate a museum that specialises in similar subject matter. With these items in mind, we selected Old Sturbridge Village and the Higgins Armory Museum.

The Old Sturbridge Village museum, located in Sturbridge, Massachusetts, USA, is visited by over 100,000 students and teachers per year (Eric White, letter, February 6, 2001). The majority are from Massachusetts and nearby Connecticut. The museum is in

the form of restored nineteenth century buildings that were brought to the area and shaped into a village. Costumed “villagers” act out their role in the buildings, explaining to students how the buildings were used and what life was like during these times. They remain in character to provide children with a valuable experience that is both educational and interactive.

The educational strategies of Old Sturbridge Village have proven themselves successful over the years. This success is judged by the high return rate of schools and the continually increasing number of school groups that visit. Mr. Eric White of Old Sturbridge Village attributes the success of their education programme to several factors (Eric White, letter, February 6, 2001). The first and most important is the relationship that the museum has built with schools. Adding value to the programme are several supporting factors, including “the quality of our educational materials, willingness to work with schools to meet their needs, and the excellence of our site and staff” (White, 2001, p.1). Old Sturbridge Village uses their web site to reinforce and further develop these factors. It offers a great deal of preparatory information, as well as schedules for teachers’ workshops. Mr. White finds that teachers who prepare for their visit have a much more valuable experience with their students than those who do not. Overall, the main factor that makes the Old Sturbridge Village education programme successful is a strong relationship with schools.

The Higgins Armory is a successful museum in which 100% of its approximately 25,000 annual educational visitors make use of the education centre (Heather Feland, personal interview, February 13, 2001). The museum is located in Worcester, MA, USA, and its focus is armour and history. The main goal of the education programme at the

Higgins Armory is to “spark the interest of the visitors.” Other goals are to dispel misconceptions about renaissance and medieval societies, to put artefacts into context as pieces of history as well as pieces of armour, and to match the lessons to the ability and focus of the educational visitors. The goals of the education programmes at Higgins Armory and the Tower are parallel in these respects. The success of the Higgins Armory in accomplishing these goals makes it a valid and important comparison.

According to Heather Feland of the Higgins Armory, the strength of their education programme stems from building relationships with schools (Heather Feland, personal interview, February 13, 2001). These relationships help ensure return visits and word-of-mouth advertising. An important part of these relationships is a computer database of schools within a two-hour radius. This allows the Armoury to send out flyers to teachers, along with free passes so they can tour the museum for themselves before bringing their students. It also allows the museum to directly contact the schools in regards to the outreach programme and public speaking. Since teachers often first visit sites alone to research trips for their students, it is helpful to place educational brochures where they are likely to see them during their visit. Another important facet of their programme is the web site. The Higgins Armory web page includes information about the museum and all of the education programmes, along with web registration for tours. Teacher seminars with different quarterly themes allow teachers to learn about the museum and develop an interest in its offerings. An education committee composed of teachers allows experienced individuals to make decisions about the best methods of publicising the education programme and catering to the teachers’ lesson plans. The

Higgins Armory has implemented all of these ideas in order to build relationships with schools and, in doing so, further the success of its education centre.

From the examples seen at both the Higgins Armory and Old Sturbridge Village, it is evident that one of the main factors in the success of an education programme is the presence of an educational relationship between the museum and schools. Our focus in this project involves investigation into how the Education Centre at the Tower can better promote itself in this manner. The Education Centre currently advertises in three different publications (Irene Davies, personal interview, 1/26/01). These publications include the Times Educational Supplement, Child Education, a magazine, and Junior Education, another magazine. One of the problems pointed out by our liaison at the Tower, Mrs. Irene Davies, is that many schools know about the Tower, but not about the Education Centre. Schools that are unaware of the Education Centre do not receive the additional educational benefit of participating in the lessons and interactive activities offered. Therefore, we utilised our research on the Higgins Armory and Old Sturbridge Village to explore promotional strategies, which could be beneficial to the Tower.

Once a relationship with a school has been established, there is the actual teaching to consider. A key method of teaching children material they will remember is by making it interesting and interactive for them. One case study, done in 1997, involved students from Benwell in Newcastle by working with them to build a web exhibition (DCMS, 2000). These students visited the Museum of Antiquities and were amazed by the exhibits. One impressed student said, "Benwell really was once the centre of the Universe" (DCMS, 2000). This comment spawned an idea from a member of the museum staff. The museum decided to work with local schoolchildren to build a web

exhibition. They had the students pick their favourite exhibits and write about why they enjoyed them. Not only did this involve the students in a large-scale project, but it also aided in their writing skills and taught them about the history of their culture. The Education Centre at the Tower of London achieves this end by offering interactive workshops where students handle historic objects and perform related activities.

In comparison, Old Sturbridge Village educates children through a combination of interactive activities and character tours of authentic nineteenth century buildings (OSV, 2000). The education programme offers workshops that include farm working, woodworking, and cooking a nineteenth century meal. One notable option is a “New England Town Meeting” where students gather into a group of 125 people and debate whether the poor should continue to be auctioned off to families or a poor house should be built. These valuable activities allow involved students to empathize with the lives of nineteenth century New England residents and increase their awareness of this period of history.

Similarly, an educational visit to the Higgins Armory includes an interactive lesson and a guided tour of the museum. During the lesson, artefacts are described and explained to the children. These artefacts are passed around the auditorium for the children to touch and view closely. The guided tour, which limits horseplay and ensures that children grasp the full benefits of the visit, occurs after the lesson. This two-step formal visit grants the children an informative and interactive museum experience.

“An Evaluation of the Education Service” of HM Tower of London, by Sarah Tapper, evaluates similar teaching methods at the Education Centre (Tapper, 1996 p.1). This study explores the reactions of students from five different schools that used the

Tower of London Education Centre. The study was based on four areas: “enjoyment, an increase in knowledge, object effectiveness, and motivation” (Tapper, 1996, p.1). Four lessons were evaluated, including “Hard Hats and Heavy Heads,” “Castles- The Built Environment,” “The Peasant’s Revolt,” and “Top to Toe.” Data were collected in the format of questions asked during a follow-up visit to the school. Overall, Tapper’s study extols the virtues of teaching the students through interactive learning rather than strict lectures. This indicates that the Education Centre is a valuable part of the education process of the Tower of London. The expansion of the current education centre program will provide more flexibility in lessons and potential students.

3.3 Surveys

In order to evaluate the effectiveness of these museum strategies discussed above in the context of the Tower of London, we chose to create and distribute two surveys. The first step in designing the surveys was to identify the objectives to be met (Fink, 1995, pp. 2-5). The objectives for our research were identified through consultation with our liaison and discussions of preliminary data. We also sought to ensure that the objectives of the surveys were measurable. A survey’s objectives are measurable if two or more people can agree on all the words and terms used to describe its purposes. It is important, however, to avoid measurement errors that may occur when data are collected and can emanate from the survey method, the questionnaire, the researcher, or the respondent. The motivation was to maintain a focus on the Education Centre in the surveys in order to attain pertinent, reliable, and valid data.

The teachers visiting the Tower of London with their students during our survey period were our target population (Fink, 1995, pp. 16-17). Eligibility criteria, such as the age of students and the time of visit, separated those teachers who were eligible for participation from those who were not. Teachers utilising the Education Centre were eligible for the satisfaction assessment portion of our research. The diversity of student groups visiting the Tower made exclusion criteria, such as language and refusal to complete the survey, important considerations in data analysis.

We were able to include all teachers using the Education Centre in the assessment questionnaire because we had the schedule at our disposal (Berg, 2001, pp. 3-4). Teachers could be found at the Education Centre and each one could be approached with a survey. One advantage of this situation was that non-response error was minimised. Non-response error occurs when participants refuse the survey or fail to complete it. The free time available to teachers while the students were occupied by the workshop gave them the opportunity to complete our questionnaire in full.

In order to survey teachers not using the Education Centre, simple random sampling was utilised (Berg, 2001, pp. 3-4). Sampling is often used when a survey addresses issues that pertain to a large population where it is impossible to approach every member. The main goal of sampling is to acquire responses from a portion of the population that represents the whole. Achieving this goal necessitates the use of an unbiased method to choose survey participants, the acquisition of adequate numbers of participants, and the collection of high-quality data by relying on valid and reliable survey techniques. Simple random sampling is the most common sampling method in which the sample is compiled unit by unit, with equal probability of selection for each

unit at each draw. Sampling error occurs when the sample is not large enough to be representative of the population to be studied. The remedy for sampling error is to increase sample size. One goal of our survey process was to attain a sufficiently large sample of teachers visiting the Tower of London to eliminate sampling error.

There are several methods of surveying the opinion of the public on a topic. Self-administered questionnaires were the most efficient in our case because the time frame for our survey was short. In self-administered questionnaires, the respondent reads the questions, marks response options, and returns the questionnaire immediately. Although the researcher is not present to probe, clarify, and motivate the respondent, a well-structured and designed questionnaire can guide the respondent through the process. As a result, a great deal of valuable information can be obtained in a short period of time.

Consent is an important part of administering questionnaires. Issues surrounding informed consent grow out of the concern to avoid – or at least identify and articulate – potential risk to human subjects (Berg, 2001, pp. 56-57). Informed consent means the knowing consent of individuals to participate as an exercise of their choice, free from any element of fraud, deceit, duress, or similar unfair inducement or manipulation. In most institutionally sponsored research, consent must be obtained in writing. In this approach, however, it is important to take every precaution to ensure that this information is not released. Safeguarding those involved in the research is a primary ethical concern to researchers. In studies such as ours, implied consent replaces informed consent. Implied consent was indicated when teachers accepted the questionnaires and took the time to complete them.

Our introductory statement was crucial in capturing the interest of the respondent. (Frey & Oishi, 1995, pp. 44-45). It presented information regarding the survey in conversational, non-threatening language to convince the respondent to participate. Several things are vital to the formulation of a good introduction. The interviewer should identify him or her self, the sponsoring agency, and the purpose of the survey to establish credibility. It is also important to verify that the proper subject has been reached, to offer an indication of the level of confidentiality, and to describe any possible benefits of participation. We included all of this information when we approached teachers entering the Tower of London to persuade them to participate. In addition, our approach improved with time because we were able to make adjustments in our introductory statement to accommodate hesitant participants and questions.

Our survey combined both original questions and borrowed questions (Frey & Oishi, 1995, p. 68). These borrowed questions were part of an earlier survey, provided by our liaison that had been successfully used by the Tower for the Education Centre. The specific ordering, phrasing, level of language, adherence to subject matter, and general style of questions depend on the educational and social level of the subjects, as well as their ethnic or cultural traits, age, and so forth (Berg, 2001, pp.74-75). Additionally, researchers must take into consideration the central aims and foci of their studies. The primary purpose of the questions is to meet the objectives established for the survey.

Wording questions is not as simple a task as it might seem (Frey & Oishi, 2001, p. 69). According to Denzin, “questions should accurately convey meaning to the respondent; they should motivate him to become involved and to communicate clearly his

attitudes and opinions; they should be clear enough so that the researcher can easily convey meaning to the respondent; they should be precise enough to exactly convey what is expected of the respondent” (Denzin, 1970, p.129). A question must also be structured in a neutral fashion so that the respondent is not predisposed to a certain answer pattern. In addition, it must be justifiable in terms of its relation to previous and subsequent questions (Frey & Oishi, 2001, p. 69). The questions that we wrote specifically for our questionnaires, as well as those taken from previous surveys, were structured to extract the opinions of teachers in a concise, organised, and prompt manner. This not only reduced the time required to complete the questionnaires, but also simplified our analysis.

Throwaway questions can be found at the beginning of our survey. (Berg, 2001, pp. 75-76). Throwaway questions may be essential demographic questions and/or general questions used to develop rapport with subjects. School name, age group, and group size were the demographic questions that we included to obtain the attention of teachers and make them feel more comfortable. Throwaway questions, as the term implies, are incidental or unnecessary for gathering the important information being examined in the study.

Essential questions were placed in the middle of our questionnaires, which is where teachers were likely at their highest level of concentration (Berg, 2001, p.75). These questions concerned the central focus of our study. They may be placed together or scattered throughout the survey, but they are geared toward eliciting specific desired information. These are the questions most relevant to meeting the needs of the survey, and must be placed where they are most likely to be answered.

Probing questions, or probes, followed most of the quantitative questions in our questionnaires (Berg, 2001, p. 75). They were included to allow teachers to elaborate on simple or one-word answers. These questions, often in the form of “Why or Why not,” were intended to be neutral and frequently asked subjects to elaborate on answers to previous questions. Their central purpose was to elicit more information about the respondent’s opinions.

Surveys use conventional statistical and other scholarly methods to analyse findings (Fink, 1995, p. 6). The choice of method depends on whether the survey aims for description, comparison, association or correlation, predictions, or the size of the sample. The analysis must also account for the type of survey data available: nominal, ordinal, or numerical. Nominal, or categorical, data come from scales that have no numerical value, such as gender and race. Ordinal data come from rating scales and may range from most favoured to least favoured or from strongly agree to strongly disagree, for example. Our questionnaires included a rating scale that ranged from a “strong deterrent” for use of the Education Centre to “no deterrent.” Numerical data come from measures that ask for numbers such as age, years living at present address, and height. An example of this type of data collection in our research included asking teachers about the number of previous visits to the Tower of London.

Data analysis can be defined as consisting of three concurrent flows of action: data reduction, data display, and conclusions and verification (Berg, 2001, pp. 35-36). In qualitative research, data reduction does not necessarily refer to quantifying nominal data. Qualitative data must be reduced and transformed in order to make it readily accessible, more understandable, and to draw out various themes and patterns. The

qualitative responses that we obtained from teachers had to be simplified and standardised to achieve these goals. The notion of data display is intended to convey the idea that data are presented as an organised, compressed assembly of information that permits conclusions to be analytically drawn. It is important to hold off on drawing these conclusions until all pertinent information has been taken into account. Verification involves confirmation of apparent patterns in the data, as well as assuring that all of the procedures used have been clearly articulated. All members of our group frequently discussed and viewed the data collected to ensure that patterns were identified and the best method of organisation was chosen.

The effectiveness and usefulness of a survey report depends greatly on the clarity of its presentation (Fink, 1995, pp. 1-24). Pie, bar, and line charts provide means to present data in a visual form. These tools enhance the quality of both oral and written presentations by giving the observer something to follow. Bar charts were used a great deal in our analysis to reveal trends and areas for further research. They also proved useful in our presentation to support the conclusions and recommendations made. Tables are especially useful in written reports because the reader can view raw data and is allowed to draw their own conclusions. Tables are also useful in oral reports in order to assist visual learners in grasping the information. The ultimate goal in using these items is to logically present data to the public to support conclusions and recommendations.

3.4 Observation

While distributing our questionnaires at the Tower of London, we had the chance to perform another type of research called observation (Berg, 2001, pp. 153-155).

Observation involves entering the setting of some group and watching and listening. Because it would be impossible to observe everything or hear all that is occurring, researchers must watch and listen only to certain relevant portions of the events. When inexperienced researchers enter the field for the first time, the number of activities and interactions happening in the setting can be both impressive and overwhelming. Adjusting to the setting often involves three steps: taking in the physical setting, developing relationships with inhabitants, and observing, and asking questions.

During the first few days, researchers explore the general location to be used as a setting (Berg, 2001, pp. 155-156). This helps them to begin to decide how to cover the area in the most efficient and effective manner. In addition, they are able to meet and become acquainted with the inhabitants. These initial encounters not only offer the opportunity for deeper conversation at a later time, but provide important first impressions. These first impressions can later be proven or disproved by the research.

After making acquaintance with the staff of the Tower and the Yeoman Warders who live there, we were able to gain valuable information about daily operations and current issues through casual conversation (Berg, 2001, p. 157). Care had to be taken, however, to maintain a passive role and not overstep boundaries of privacy and confidentiality. Often, our casual conversations involved asking passive questions about issues that we considered relevant to our research.

4.0 Methodology

The methods chosen to complete our project were based on our goals, to communicate with teachers about the Education Centre at the Tower and investigate strategies to maximise its accessibility. With these determining factors in mind, the first step was to perform some background research to gain an understanding of promotion, museums, education, and surveys. The creation of questionnaires to be handed out to teachers began during the Pre Qualifying Project and was finalised within the first week on site. While collecting data, a brief comparative study between previously researched museums and the Tower was carried out. As a result, interviews were held with members of the staff to gain an understanding of certain issues dealing with the current operation and expansion of the Education Centre. These methods were used successfully to obtain the data relevant to complete an analysis of the Education Centre.

4.1 Survey

The best method for gathering information with our time constraints was to conduct a survey. We had only seven weeks to complete our project, but only three of these weeks were spent collecting data to allow time for analysis and the drawing of conclusions. In order to obtain the largest amount of data possible in this period, a self-administered questionnaire was used. This allowed us to be available to the teacher filling out the survey, as well as to obtain the information immediately.

The best way to gain the opinion of all teachers visiting the Tower, regardless of whether they used the Education Centre or not, was to create two questionnaires. The first questionnaire, which obtained information about reasons for visiting the Tower and

knowledge of the Education Centre was referred to as the general questionnaire. This survey was distributed to all teachers, including those visiting the Education Centre. Our goal for the general questionnaire was to obtain ten surveys a day for fifteen days. The second questionnaire, known as our assessment questionnaire, was created for teachers visiting the Education Centre. Our goal for the assessment questionnaire was fifty, but this was providing that fifty teachers used the Education Centre during our surveying period.

4.2 Questionnaires

After the background research was complete and a survey method was developed, it was necessary to create a general questionnaire to be distributed to teachers who visit the Tower. A list of questions was compiled through the use of our background information and comparative studies. The information provided to us by Heather Feland and the Higgins Armory was especially useful and we decided that, because of the similarity in content and themes, it would be a good basis for comparison with the Tower of London. Therefore, many of the questions were geared toward assessing whether or not the promotion strategies utilised at Higgins Armory might prove useful at the Tower. Other questions were developed to ascertain how familiar visiting teachers are with the Education Centre and their methods of finding useful educational tools outside of the classroom for their students.

In order to determine the overall impression of the teachers who attended workshops at the Education Centre, it was necessary for us to create a second questionnaire. An important part of promotion is ensuring that the service satisfies the

expectations. The questions were devised to assess the satisfaction of teachers and the likelihood of return visits. The Education Centre Review discussed earlier was taken into account as a good reference and comparison point for the responses obtained. The opinions of the teachers could be compared to the reactions and retention of the students after the workshops.

4.3 Sample

The sampling method utilised for the general questionnaire was opportunistic in the sense that we made every effort to approach as many available teachers as possible. We spent an average of two hours a day actually handing out the general questionnaire to teachers because the majority of schools entered the Tower between the hours of 10:00 and 12:00 in the morning. Once general questionnaires were handed out, we collected them until about 2:00 PM, by which time most schools had departed. Our sampling method was also random in that only a percentage of all teachers who visit the Tower during the school year were surveyed. Based on the academic school year, student groups can visit the Tower approximately thirty-five weeks out of the year. Our sampling time was only three weeks, meaning that roughly 8.5 percent of all visiting teachers had the opportunity to take our survey.

A similar situation of random sampling also occurred with our assessment questionnaire. Only 8.5 percent of all teachers using the Education Centre throughout the year were approached. Based on the scheduling of workshops, a maximum of six groups could visit the Education Centre a day. Because most school groups visiting the Centre had more than thirty students (the maximum number of students per workshop), there

was typically one school that would sign up for multiple sessions during the day to allow all the students in the group to take the workshop. In this case, one teacher would fill out the assessment questionnaire for the entire group. With the aid of the Education Centre staff, we were able to contact every school that went to a workshop to fill out the assessment questionnaire.

4.4 Distribution

We decided to distribute only the general questionnaire to teachers entering the Tower of London with their students at the Middle Drawbridge. As teachers entered the grounds of the Tower, our team approached them with the questionnaire, keeping in mind the several considerations associated with approaching subjects in public. The teachers were often busy attending to the students over the course of the day. The team found that some teachers did not even have time to speak with us. On the first day of surveying, we received a zero percent response rate. This was because we made some improper assumptions.

Originally, we thought that teachers would respond well to an explanation of the goals and benefits of the project for the educational community. We also asked teachers to drop off the surveys at a ticket office on the grounds. However, teachers did not have time to listen to us, so they rarely heard our explanation of the benefits. It was not practical to assume that they would remember the survey, where to drop it off, and its benefits over the course of the entire day. We observed that it was common for teachers to place the surveys in a folder and forget about them during their busy day. As a result, we developed a new approach, in which we offered teachers an incentive for returned

surveys. Each of their students would receive a postcard upon our receipt of a completed survey. As a result, our response rate jumped from zero on the first day to twelve on the second day. We found that the subjects were more inclined to respond when presented with an incentive rather than knowledge of our project. Another method of improving response rate was approaching teachers during their lunch break with the children. This enabled us to remind them about our survey and the postcards, and we often received a completed survey immediately.

There were two strategies, which we used to distribute the second questionnaire, meant to assess satisfaction with the Education Centre. The method used was dependant on what the teacher of the workshop preferred. The first approach was to visit the Education Centre at the end of the workshop. This allowed the teacher to continue paying full attention to the students while we spoke with the visiting teachers. The second method was to give our questionnaires to the teacher prior to the workshop and she distributed them at her leisure. This was done to prevent the minor interruption of the class when we walked in to speak with the visiting teachers. When the assessment questionnaire was handed out at the workshops, the general survey was also administered. We felt that the combination of these two questionnaires, with their quantitative and qualitative composition, would provide clear insights into the promotion and quality of the Education Centre.

4.5 Brief Comparative Study of Museum Education Programmes

During our general research into relevant topics, we also contacted WPI Professor Jeffrey L. Singman. We chose to contact Professor Singman because he is familiar with

medieval studies and the operation of museums; he is also the school's liaison to the Higgins Armory Museum in Worcester, Massachusetts. Professor Singman put us in contact with Heather Feland, the Director of the Education Centre at the Higgins Armory. We used Miss Feland as a resource of information about the promotion, operation, and evaluation of their education programme. The information gathered allowed us to compare the promotional strategies of the Armory and the Tower. These comparisons provided us with ideas that, after further evaluation of the Education Centre at the Tower, could be explored as possible methods for the Tower to incorporate into their promotional strategy.

Through Eric White, our contact with Old Sturbridge Village, we gained useful information pertaining to the operation of their education programme. We also compared information provided on the Old Sturbridge Village educational programme web site with that of the Tower. In this way, more ideas and methods were discovered which could be further explored.

The combination of all the research described above provided us with a firm understanding of the issue to be addressed, as well as the means to address it. We compiled the relevant and important information in our background research so that we could refer to it when necessary. This would also prove useful to readers of our final project report.

4.6 Interviews

A second method of surveying utilised in our project was interviews. These interviews were developed as a result of our comparative studies. This proved to be a

useful way to learn about the logistics of how the Tower and the Education Centre are run. The interviews gave us a chance to present our ideas to the staff members that are directly involved. The feasibility of incorporating our ideas was clarified using their responses. We also obtained information on the goals of the Education Centre that they feel important and are striving to achieve. These discussions allowed us to take our project goal farther, better utilise our ability to determine promotional expansion, and draw stronger conclusions.

5.0 Results and Analysis

A major aspect of our project was analysing the data that we compiled through surveys, interviews and observation. Most of the information collected was either nominal or ordinal data (Fink, 1995, p. 6). Some of the questions on the questionnaires required one-word responses, while others were in the form of a short written response. These questions allowed us to gather and record the opinions of teachers, which we analysed to obtain an idea of the issues at hand. For example, one question on the assessment questionnaire asked which aspects of the workshop were most valuable. This type of question allowed us to ensure that the programme is maintaining its goals of educating students about the Tower.

The purpose of analysing the data was to pinpoint areas of the Education Centre's promotional strategies that would be worth the time and effort to improve. The data was also used to determine whether or not the Education Centre was satisfying the teachers' expectations. We recorded both qualitative and quantitative data on issues such as why teachers use the Education Centre, how the teachers found out about the programme, and the quality of the programme. Once we fully understood the data gathered from teachers and staff told us, several conclusions and formulated recommendations. These recommendations will give the Tower the opportunity to decide what courses of action could be implemented to improve the services and publicity of the Education Centre.

5.1 General Questionnaire

The general questionnaire that we distributed to teachers coming to the Tower of London yielded some interesting data and information. Out of 215 surveys given out, we

received 107 for a response rate of 49.8%. Several items on these surveys stood out with significant support for particular answers. In addition, comparison of certain responses to the nationalities of the student groups brought about a higher level of clarity, understanding, and meaning.

The vast majority of student groups that visited the Tower of London were from various parts of Europe, as shown in Figure 1. In addition, attendance decreased as the location of schools moved further from the Tower. For example, only one group each from America, Spain, Italy, and Belgium was recorded, while England and France had 68 and 21 groups, respectively. This clearly shows that proximity, ease of access, and finances for transportation are important considerations for teachers in choosing to visit the Tower of London. Many local schools take advantage of the Tower as a learning resource because it is an important part of English history and is within a short distance.

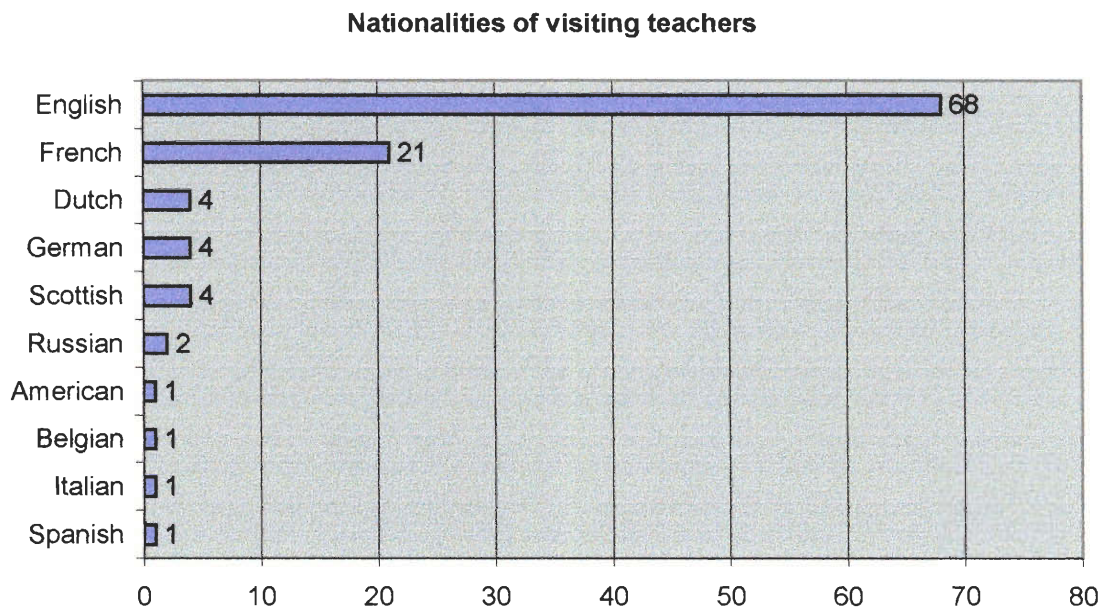


Figure 1

Of those teachers who completed our general questionnaire, 39.3% (42/107) were on their first visit to the Tower. As Figure 2 indicates, the number of previous visits dropped off sharply in the 1-2 visit range (23.4%, 25/107) and continued to do so through 3-4 (11.2%, 12/107) and 5-6 (10.3%, 11/107) visits. There was a rise, however, in the 7+ category to 15.9% (17/107). It is important to mention that this category is larger because it encompasses a wide range of responses, from seven to as high as 64. This was the most appropriate way to incorporate the large gaps that existed and include the information in a concise manner. Figure 3, on the following page, shows that these respondents are teachers that are in the areas of England and France and visit the Tower regularly to supplement lessons taught in the classroom. In addition, the drop off in total number of previous visits for other nationalities is likely to again be caused by distance of travel and expenses.

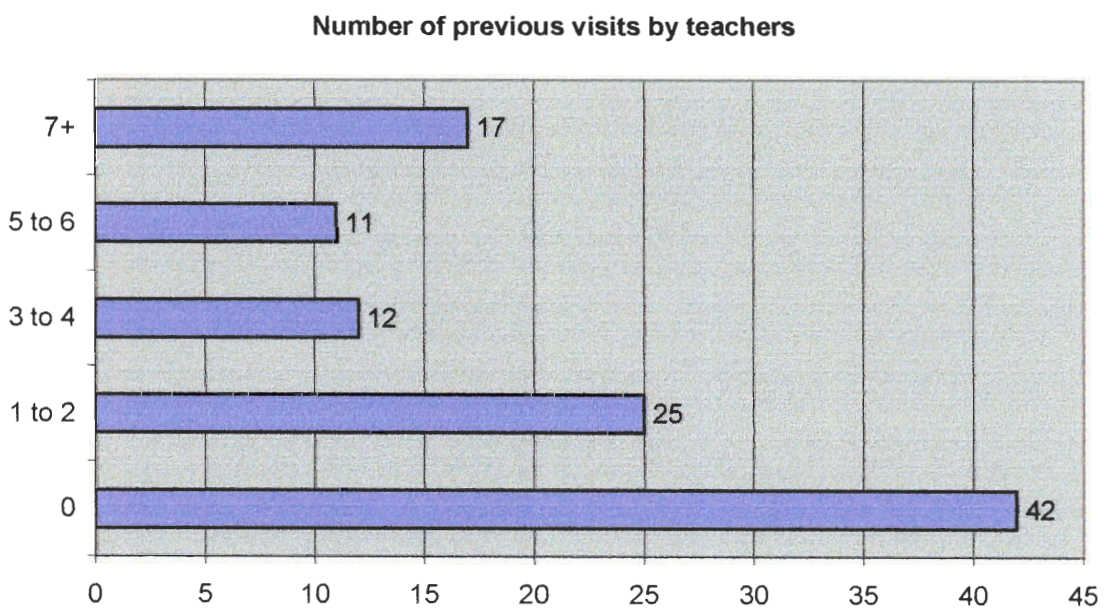


Figure 2

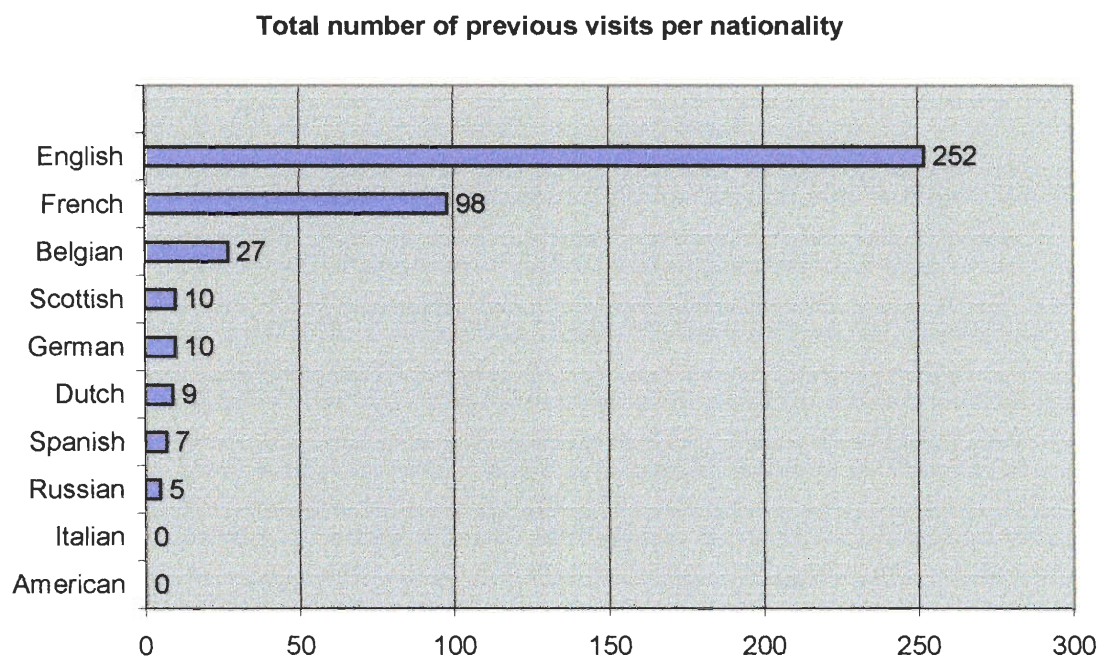


Figure 3

The large number of return visits by English and French schools also accounts for, and is supported by, the responses in Figure 4 indicating “curriculum” as the main reason for visiting the Tower. Other responses, such as “Tudor study” and “culture and history”, run along the same educational lines. Several teachers included a secondary reason that was more from the tourist point of view. These reasons included the ravens and the status of the Tower as a famous landmark. They do not show up often, however, and this reflects the use of the Tower for supplemental and interactive learning.

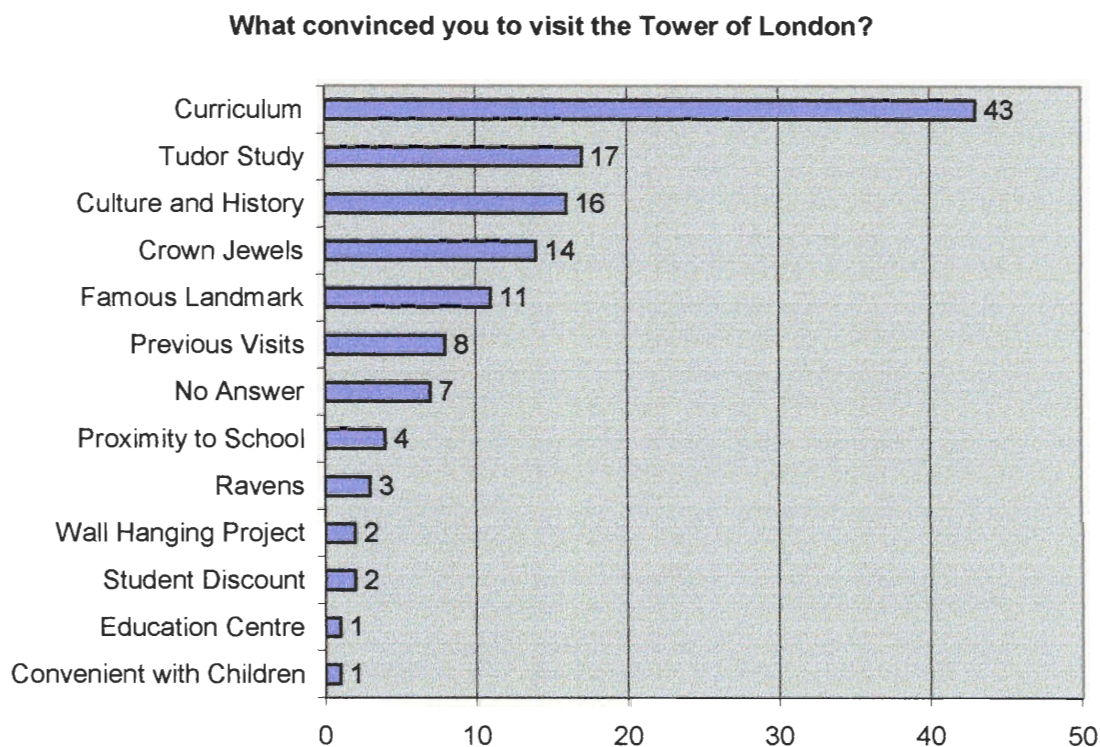


Figure 4

Of the 107 questionnaires collected from teachers, 77 (72%) were unfamiliar with the Education Centre at the Tower of London and 29 (27.1%) were familiar. There is a discrepancy here, however, because 56 (52.3%) indicated that they were informed of the Education Centre's existence at the time of booking a tour. This number does not support the previous figures because the number of familiar responses would have to be at least 56. It is possible that the word "familiar" caused some confusion among teachers. They may have assumed that this choice of words indicated use of and experience with the Centre and not mere knowledge of its existence. The rather low percentage of people told about the Education Centre at the time of booking is most likely because one teacher usually books the tour for an entire group. This occurrence causes a discrepancy in the results of this particular question.

According to Figure 5, discussion among colleagues was the most prevalent method of spreading information about the Education Centre. This knowledge was likely based on experiences visiting the Centre because, based on the same figure below, there are no specific materials being circulated to teachers and schools in the educational community. The Internet and journal publications are also only providing five and one responses, respectively. At this time, they do not represent a significant means of promoting the Education Centre.

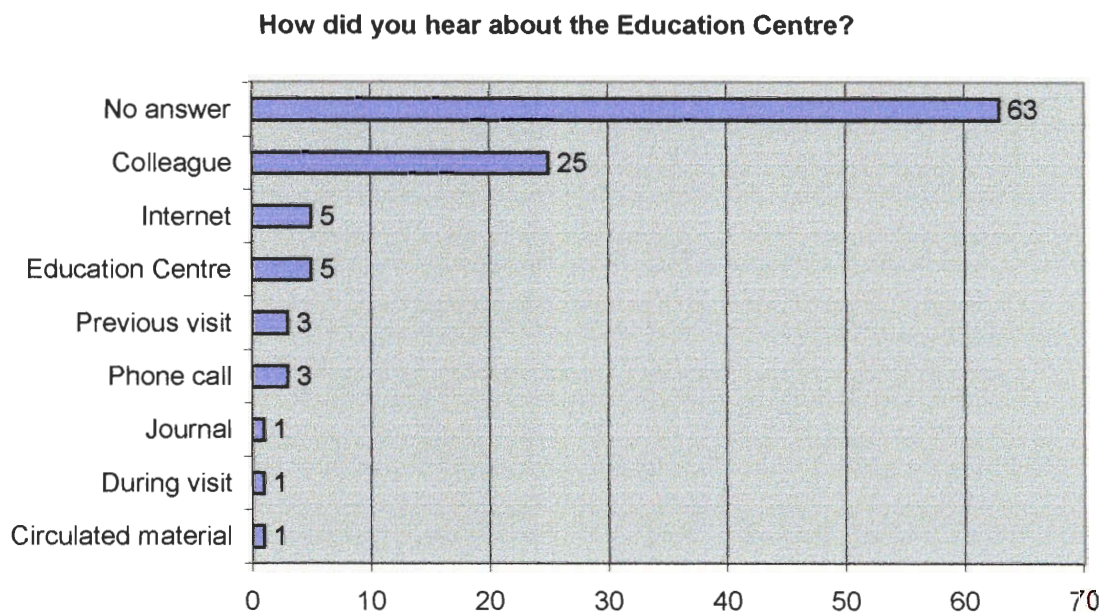


Figure 5

It is apparent that time constraints do deter teachers from booking lessons with the Education Centre. Figure 6, on the next page, indicates that 33 (30.8%) teachers would be strongly deterred and another 34 (31.8%) would be mildly deterred from using the Centre for this reason. The school day normally runs from 9:00 to 3:00 and constrains all class excursions. For schools that are any significant distance from the Tower, travel severely restricts the amount of time that students can spend during a visit and setting

time aside for a workshop is difficult. Aside from the booking of one Spanish school, the bookings were all English. Proximity and ease of access are likely the reasons behind this phenomenon.

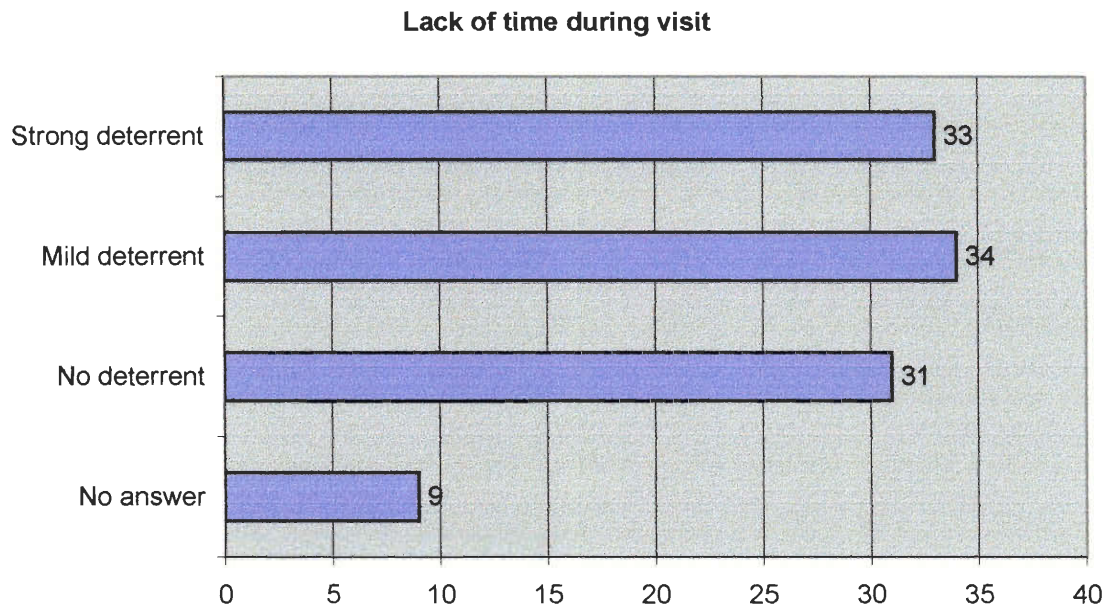


Figure 6

There appears to be some resistance to the idea of an Education Centre admission fee. No such fee is currently in place, but it may need to be implemented in the future to maintain the operation of the newly expanded Education Centre. According to Figure 7, although there were only 16 (15%) “strong deterrent” responses given by teachers, a significant portion, 39 (36.4%) in total, would at least be mildly deterred by such an expense. The money spent on transportation and entry into the Tower depletes the funds of the schools significantly. Despite the additional educational value that the Education Centre offers, finances alone could prevent the booking of workshops and lessons.

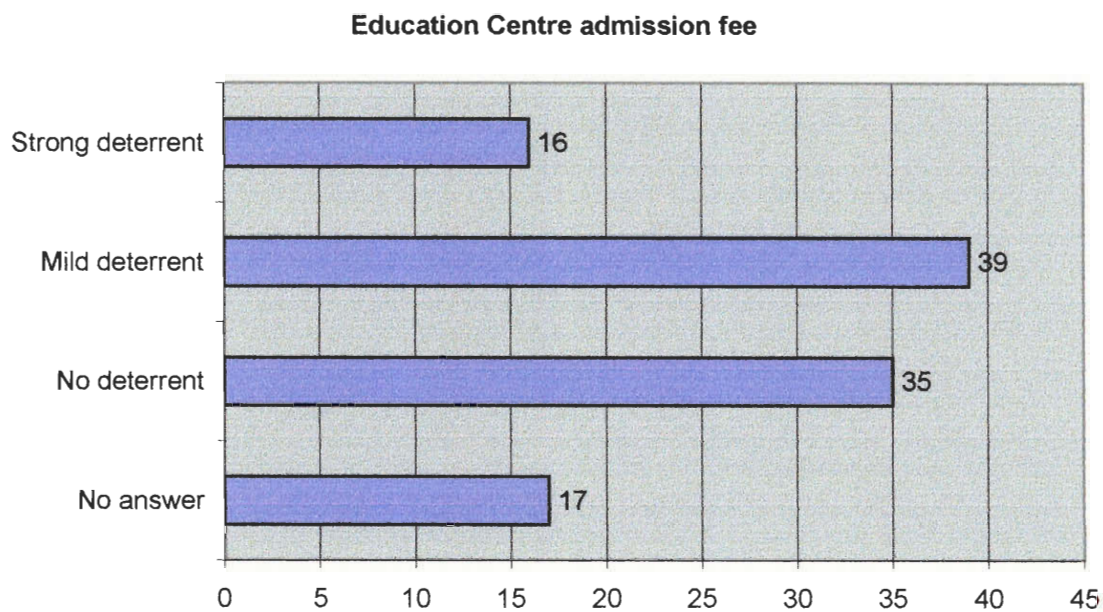


Figure 7

Web registration received a positive response from most of the teachers. If it were available, 69.2% would consider utilising the item. Teachers' seminars, however, were not as popular with only 34.6% of teachers ticking the item. This is likely due to the tight schedules that teachers maintain. The outreach programme received a favourable rating of 55.4%, but proved to stand out even more when compared with the nationalities of those who would utilise it. As shown in Figure 8 on the following page, out of the 55 total positive responses for an outreach programme, 44 were English and seven were French. These values represent 80.0% and 12.7%, respectively, of the total. Once again, the high level of English and, to a lesser degree, French involvement with the Tower as an aid in supplemental learning stands out.

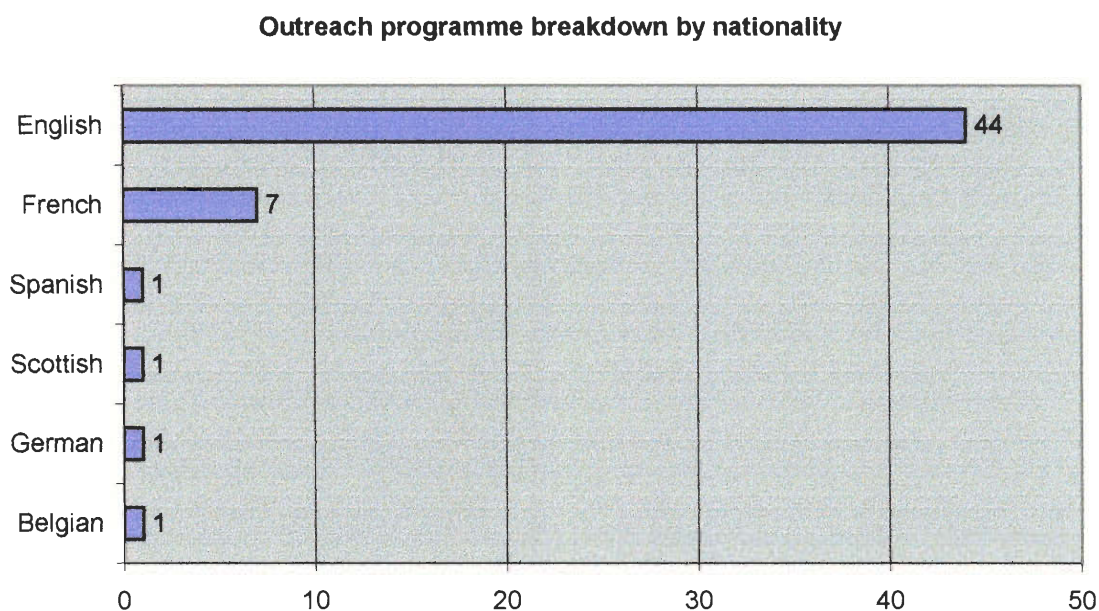


Figure 8

5.2 Assessment Questionnaire

We received a total of 27 completed assessment questionnaires from teachers who visited the Education Centre. The surveys were usually distributed at the end of the session during the interactive portion. In most cases, this meant the teachers had time to fill out the questionnaires while the students were occupied. These responses included comments, which ranged from outraged with the lack of interactivity to delighted with the background information that the session provided.

An important part of determining teacher satisfaction was determining what they were looking for in booking their lesson. The first qualitative question in the survey dealt with reasons that teachers chose to visit the Education Centre. A large portion of teachers (40.7%) was impressed by a previous visit and chose to return. Eight (29.6%) of the responses were from teachers who felt their students needed more background on the

Tower of London than an unguided tour could provide. Other interesting responses included mention that they visited to reinforce their curriculum, that they hoped the Centre could offer experts and resources, and that interactivity was a goal of their visit.

The second qualitative question asked what overall impression the teachers had of their visit to the Centre. Twenty (74.1%) of the responses were positive, where teachers enjoyed the Centre, found it valuable for the students, or referred to the excellence of the staff, organisation, and resources. Many (37.0%) stated the obvious, that the Centre is small, but these responses are being addressed with the upcoming expansion. Some (18.5%) of the responses mentioned the value of interactive lessons in student learning. Another common response (29.6%) was that the Centre helped to reinforce or focus the visit to the Tower. Two respondents complained that the subject matter did not match the curriculum of their students' grade level. A third stated that the lesson was "very poor, dull and uninteresting, felt like a classroom." These responses reflect different expectations and time constraints of teachers that affected their judgments of the Centre. Those who expected a lesson with an interactive session at the end were pleased. Those who had little time, and expected a largely interactive experience were disappointed when the children did not have enough time at the end to touch the artifacts.

From our analysis of the Education Centre data, the most noticeable trend involved the interactive portion of the lesson. The first indication of this was in the analysis of the question: "Do you feel the workshop was a beneficial use of your and your students' time?" This yes or no question was followed with a probing question of "Why or Why Not?" This question received only one reply of "No" out of our sample of 27 teachers. The subject who answered "No" cited his reason as "irrelevant historical facts

that confused children.” As shown in Figure 9, 25.9% of the subjects left the “Why” question blank, possibly due to redundancy with answers to the second question. Of those who answered the question, 30.0% mentioned that the interactive portion of the lesson was beneficial. Subjects who felt the workshop was beneficial because it focused the visit or helped put the Tower in context numbered 9 (45%). Others decided that the interesting lecture or knowledgeable staffs was beneficial. Still another said that students would now have information to use when they returned to school. Overall, 96.3% of those surveyed stated that the session was beneficial. Alone, this figure does not show that interactivity was the most important factor, though it had a reasonably strong showing. It is only when combined with results of other questions that a pattern emerges.

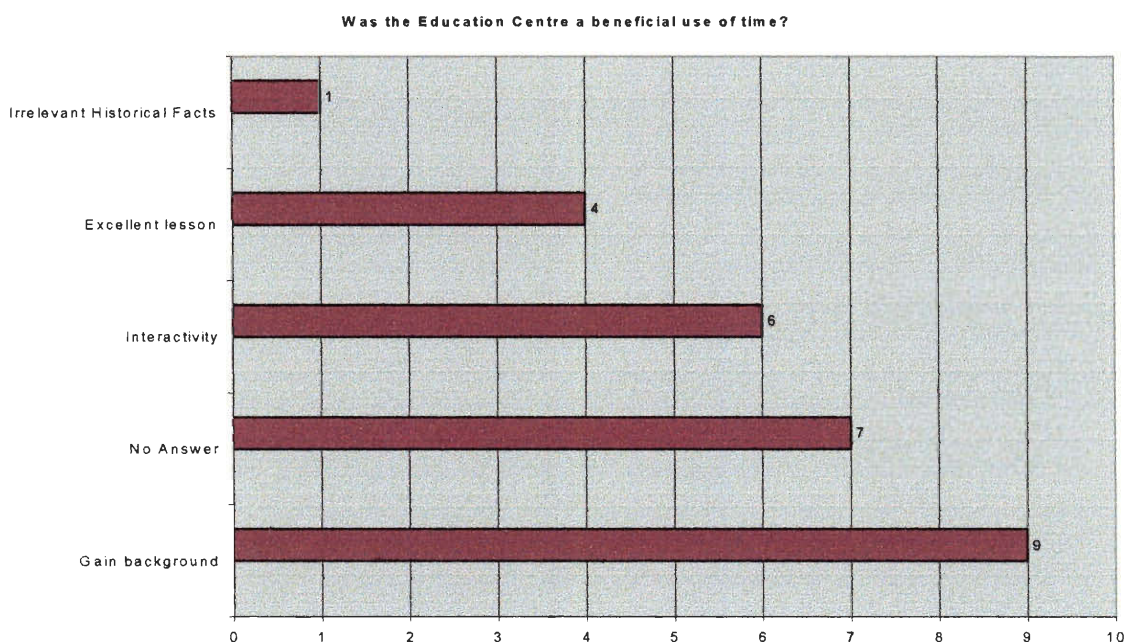


Figure 9

The fifth question asked which aspects of the workshop were most valuable. In this case, 44.4% of the responses indicated interactivity. Twenty five point nine percent mentioned that they enjoyed the slide show and/or accompanying lecture. Other

reactions included teamwork, question and answer sessions, and connections made by the lecture. Only one subject left this section blank, and one answered “all.” The most popular reaction was that the interactive portion of the lesson was most valuable.

The sixth question asked what aspects of the lecture were least valuable; these responses began to suggest improvements to the Centre. Thirty seven percent of these were left blank, and 18.5% effectively answered “none.” Out of the remaining twelve responses, seven (58.3%) stated that either the talks were too long or the interactive was too short. It appears that a large proportion of teachers would prefer more time devoted to interactive activities. Two responses mentioned that the topic of the lecture was different from what they had expected, therefore not matching their curriculum. Another said that the “recap of story of Henry the Eight's wives could be done in school.” Only one teacher declared that touching the artefacts was the least valuable portion of the lesson.

The seventh question requested that the respondent suggest improvements to the workshop. Again, the majority of the responses (33.3%) recommended that there be more time for interactive activities. Two of the responses (7.4%) were unhappy with the focus of the lesson, stating that the period was wrong for their curriculum. These teachers were both with year group 7 (age 11) and from the same school, indicating that they probably booked the wrong lesson. Several respondents also suggested larger facilities and tables. Another indicated that role-plays be included in the interactive portion of the lesson. The largest group, however, was still that which requested more time for the interactive session.

Groups that chose not to return to the Education Centre were likely to suggest that less time be spent on lecture and more on activities. Five respondents (18.5%) stated that they would not return to the Centre. The reasons included expense, amount of time in the curriculum, and that they would not return with the same group. All three respondents that gave expense as a reason, indicated that more time be spent involving the children in the workshops. Of the (77.8%) that answered yes, four suggested that there be more time spent on activities. The two groups that felt that the material was not matched to the curriculum said that they would return, indicating that they still found the workshops worthwhile. One teacher mentioned that a handout on the slides would be helpful, and another suggested that the lecture be broken up by periodic activities, rather than separating the two completely. The fact that all of those not returning wanted more student involvement, gives further weight to the argument for increasing its time.

The question, “Do your students wish to discuss the content of the workshop further?” was meant to investigate the impact of the session on students. However, the teachers did not have a chance to poll the students before answering the question, so it was often left blank. Of the 17 (62.7%) responses given, only 29.4% answered that the students did not care to discuss the session afterwards. This is encouraging, because it means that most of the teachers thought that their students were impacted by the lesson. Nine teachers specifically mentioned that they would be using the information packets for follow-up when they returned to school. The workshop would be the basis for write-ups, projects, and lectures. It was interesting to note that a sizable portion of these teachers either did not respond to the impact question or answered ‘No’ to it. This indicates that they may not have understood the question.

Most of the teachers (81%) felt the educational packets provided would prove to be useful. As mentioned earlier, many planned to use them as follow up material for projects and lectures when they returned to school. Of those that did not, two left the answer blank, one had not received the packets, and two received packets for the wrong age group. Everyone who received proper packets found them to be useful, but the suggestion could be made that everyone receive proper packets.

There were several suggestions for improvements to the Education Centre. Two of these asked for more time spent on interactivity. Three suggested more time overall, including one that hinted at time spent with the Education Centre teacher outside of the classroom. One teacher requested more objects involved in the lesson, a quiz about each object's use, and group activities to involve every child. Another did not know what to expect from the lesson, and was surprised at its content. This teacher suggested that more information be sent to schools about the lesson beforehand. The specific suggestions about the lesson could be useful to the Centre, and those referring to the amount of time allotted to the lesson help back up the earlier argument that more time be spent on interactivity.

5.3 Error

During the course of our three-week surveying period, several instances of error may have had impact on the accuracy and validity of our results. Initially, our goal was to obtain a total of 150 general questionnaires. This was considered to be a large enough sample to avoid sampling error. In the context of our research, this error could have resulted from not obtaining responses from teachers that represent the opinions of all the

various student groups that visit the Tower. If one particular sect of the teacher population is more prevalent, then the data may be biased. As stated earlier, we were able to collect 107 general questionnaires, which fell below our initial goal. Some sampling error may have been introduced as a result, but our total is still high enough to encompass all the various opinions and interests of the teachers coming to the Tower.

Many of the teachers who visited the Tower from outside of England did not speak English. As a result, they were unable to complete a questionnaire and turned down our attempts to include them in our research. In some cases, teachers accepted the questionnaire upon our approach, but never returned it to us. These items contributed to level of nonresponse error in the data that we collected. This error was not significant because the majority of these teachers were on their first visit to the Tower and came from considerable distance. They were unlikely to know about the Education Centre as a result and many of the questions could not be answered due to relevance issues (e.g. outreach programme).

As stated earlier, it is possible that the wording of some of the questions on the questionnaires may have caused discrepancies in our results. The question regarding familiarity with the Education Centre on the general questionnaire caused some confusion among teachers and was reflected in the data obtained. Use of the word 'deter' in the rating scale also may not have been understood completely by all the teachers because often some of the items were left unfinished. In some cases, teachers may not have read through the questions and directions carefully enough to properly fill out the survey. For example, although the directions indicated ticking the items that would be considered for use, some teachers underlined or circled the actual items. This lack of

attention could have brought about some measurement error. It is also possible that some of this type of error was introduced in our compilation and analysis of the data. All members of the group kept this minimal, however, through constant attention.

5.4 Interviews and Observation

During the first few weeks of working with the Tower, we were able to observe its daily operation. These observations, along with conversations with the staff, enabled us to develop some ideas that could be used to better promote the Education Centre, as well as enhance the satisfaction of visiting students and teachers. Through the interviews conducted with our liaison and the scheduling department, information was gathered about the future expansion of the Education Centre. Based on this expansion, we also investigated the feasibility of our ideas about web registration, student tours, and an outreach programme.

Our first inquiry was about the future expansion of the Education Centre. The construction for the new Education Centre, to be located on the second floor of the Waterloo Block, begins in April. The new Centre will be larger, with the capacity to hold a total of 90 students and teachers comfortably. It will have a large lecture hall, which can hold 60 people, and a large classroom for a group of 30. This renovation will allow for the Education Centre to book more workshops, as the current Centre is already fully booked. The projected date of completion is in December of this year. A further expansion is also projected to begin next year, which will involve the building of another lecture hall with a capacity for 50 to 60 people. This hall will be shared between the general public and educational visitors. There will be another classroom with a capacity

of 30 people to which the Centre will have access as well. This project will be completed in December of 2002.

In order to explore further development of the Education Centre to accompany the expansion, we wanted to gain a better understanding of the current workshops. The Tudor Monarchy, which is geared towards the ages of eight to eleven, and Tudor History, developed for the ages of twelve to fourteen, are the two most popular workshops. Through the use of past scheduling diaries, the Education Centre has developed a rotation of workshops based on popularity and National Curriculum. For example, a workshop that teaches children about the history of 16th century England will be offered during the spring when the children are learning this material in school. This rotation repeats itself every semester and has a different theme every two weeks.

Currently, the information on workshops is presented in the form of a brochure. The ability to gain access to this information and sign up for workshops could be increased by the implementation of web registration. The majority of those teachers surveyed expressed an interest in this concept. To understand the plausibility of introducing web registration to the Tower of London's web site, it was important to familiarise ourselves with the student group scheduling process.

There is some important information, other than the school name and group size, that needs to be obtained from teachers at the time of booking a visit to the Tower. When they desire to plan a visit, teachers must initially contact the tour scheduler. They usually have a date chosen ahead of time and inquire about its availability. They may also call and give the tour scheduler the time of year they would like to visit, spring semester for example, and ask what dates are available. The Tower has set a limit of 750 group

visitors per day. This number is increased to 900 during the busy months of spring. Once a date is set, the scheduler sends out packets with standard information such as directions and times. If the teacher asks for educational material or requests information about special needs, such as handicap access, this information is sent out as well. These are the only steps involved in booking a tour, but if the teacher wishes to book an Education Centre workshop, he or she is directed to speak with the scheduler in the Education Department.

When a teacher wishes to book a workshop for his or her students, they must choose the type of workshop that they would like ahead of time. Different workshops are offered based on age group and desired content. When the teacher speaks with the workshop scheduler, it must be determined if there is an open slot. If this exists, the workshop will be booked and the scheduler will send out educational packets based on the content of the workshop. If the workshop is unavailable for the date desired, the teacher and the education scheduler will work together to determine a new day, or perhaps another workshop, that will coincide with the teacher's preferences. If a new day is chosen, the educational scheduler will speak with the tour scheduler to book entrance to the Tower.

Two separate scheduling systems are in place because the Tower is run by the Historic Royal Palaces and the Royal Armouries operates the Education Centre. Each organisation has personnel in charge of booking their respective interests with visitors. The concept of web registration was discussed with the scheduling personnel from both departments. Each felt that online registration would be a useful tool if both scheduling departments could be combined into a single entity.

Along with web registration, teachers expressed an interest in the concept of an outreach programme on our general questionnaire. The use of an outreach programme has been successful in the Higgins Armory Museum, Old Sturbridge Village, and the Royal Armouries Museum in Leeds, England. In 1995, an outreach programme, sponsored by British Telecom, was begun at the latter. With the additional funding, the museum was able to hire a full time presenter and van for transportation and materials. The programme offered seminars at least once a week. Despite the success of this programme and the museum's attempts to preserve it, corporate sponsorship ended after one year.

With this in mind, we inquired about the use of such a programme at the Tower's Education Centre. We discovered that there is currently a programme in place that operates approximately once a month. The purpose of this programme is to bring an educational seminar to local schools and libraries in the less fortunate areas of London. The seminars are open to anyone who is interested, including school groups who cannot afford to visit the Tower and interested members of the community. Currently, there is a member of the Tower of London's staff seeking funds through sponsorship to expand the outreach programme.

6.0 Conclusions and Recommendations

A great deal of the data collected through our general questionnaire emphasizes proximity and ease of access as key points that affect the attendance of the Education Centre. It is logical that schools in the London area, as well as England in general, are able to visit the Tower of London relatively inexpensively and with short travel times. As a result, these school groups have the opportunity to experience a workshop during the course of the day. The Channel Tunnel has also made the Tower more readily accessible to student groups from France, which was the second largest nationality in our data.

Teachers from England and France use the Tower as an educational tool to supplement the material taught to students in the classroom. Their visits to the site often coincide with study of Tudor and medieval history, when the Tower was in its prime. This allows the students to connect the content of their history books with an actual structure that they can walk through and view. It is believed that this will allow them to better understand the Tower and retain the information.

From our analysis, it is apparent that time constraints are a strong reason that teachers do not book lessons with the Education Centre at the Tower of London. The hours of a typical school day set a limit for how much time can be spent on a trip. The distance that must be travelled to reach the Tower from the school's location cuts that time even shorter. In many cases, once that distance reaches a point where no significant time can be spent on site, teachers see no purpose in booking a lesson with the Education Centre because they want to be able to see as much of the actual Tower as possible.

Schools in the London area that are able to travel to the Tower relatively quickly are currently the major clients of the Centre.

The expenses that must already be paid to bring a group of students to the Tower and obtain admission cause resistance to an Education Centre admission fee. Many schools in the London area are unable to make this trip at all because of a lack of funds. A fee to use the Centre is an expense that some schools cannot afford and would therefore be forced to forgo the opportunity. Since many teachers consider the Tower to be an educational tool in itself, they may also believe that the workshops available through the Education Centre should be satisfied by admission into the Tower.

The promotion that the Education Centre currently has in place, including journal and magazine advertisements, does not have the desired effect. Knowledge of the Centre has been spread primarily through discussion among colleagues who have experienced workshops first-hand. Only a small group of teachers learn of the Centre through publications and the Internet. A suggestion for improvement of the promotional strategy is the creation of a database that contains all schools within England and France, the two major contributors of traffic to the Tower. Flyers and mailings can be sent to these schools regularly to spread word of the Education Centre's existence and what it has to offer. This is a method currently in place at the Higgins Armory, which has helped to bring education programme attendance to 100% of visiting schools. In addition, the word-of-mouth promotion that has been present to this point can be even more beneficial when more teachers are exposed to information about the Centre.

An outreach programme at the Tower of London is in demand by schools in England. The majority would take advantage of such a programme, and it would help to

boost the exposure of the Centre. In addition, schools that cannot afford to come to the Tower due to distance and expense of travel can still experience an interactive and interesting presentation that brings the history of arms, armour, and the Tower itself to life. Positive responses to such a programme could also prompt the allocation of more funds to make a visit to the Tower a priority for these schools. Since fast and easy transportation is now available to France, the outreach programme could expand to include this area as well. The exposure of the Education Centre and the Tower would grow considerably. Above all, the current image of the Tower as an educational tool would be reinforced and the Education Centre would play an invaluable role in creating this positive outlook.

Surveys of teachers visiting the Education Centre have shown that most teachers would like more time spent on children's activities and less time spent on lecture. Data analysis has pointed out that responses to five different questions in the assessment questionnaire indicate a strong trend towards this opinion. Cross referencing this information with reasons teachers would be averse to returning makes it apparent that teachers who are not satisfied with the amount of interactivity do not feel that the money spent was a good value. The need for interactivity in children's lessons is strengthened by Sarah Tapper's evaluation of the Education Centre which concludes that the children retain more information during a lesson that involves hands-on activities. The underlying recommendation is that there be more time spent on interactive portions of the lesson.

Our investigation into possible methods of increasing accessibility and promotion of the Education Centre has been successful. We have learned that once the expansion of the Centre is complete, there will be more room to incorporate ideas that wouldn't have

been possible with the current facilities. The Education Centre is now fully booked, which does not allow for an increase in participating student groups. Once the new Centre is complete, there will be more room for students, more time slots available per week, and therefore an ability to take in more groups.

Introducing new facets to the current Tower of London web site could enhance the accessibility of the Education Centre for teachers, allowing the expanded Centre to remain fully booked. Many other countries, especially France, would find it useful to visit the web site and learn about the Education Centre, rather than call and request information. Providing online registration is the easiest way to register for a workshop. Creation and incorporation of a web registration system could be considered as a future WPI Interactive Qualifying Project.

The primary barrier to allowing teachers to register for tours and workshops online is the current split in governing agencies and scheduling. A successful online registration site would require that the two scheduling methods merge into one. The Internet would provide teachers with the ability to view an updated calendar, which displays times and availabilities of workshops. The technology would also allow for payment to be made through a credit card or a school account. Packets with educational and special needs material could be requested upon registration. One disadvantage to web registration is that the teacher does not personally speak with a member of the Tower. Although some returning teachers may still use the phone registration system, web registration would attract new teachers.

Another means of attracting new teachers is increasing the interactivity between the students and the Education Centre through a guided student tour. Student tours are

currently available through the Tower of London and Blue Badge guides at an additional cost. Due to the added complication and expense, student groups rarely take advantage of these options. Through observation of students visiting the tower, we noticed that there are several problems. Students wander aimlessly through the grounds and some are removed from the tower for misconduct. Yeoman Warders indicated in several casual conversations that unattended students are a nuisance for several reasons. They often bother tourists with horseplay and harass guards. In addition, there is a concern that they may be injured without an adult present to allow medical attention. Providing a guided student tour would give children the chance to gain knowledge of the Tower from someone other than their teacher. This would also allow the teacher time to relax. A route could be set up to prevent interference with the tours given by the Yeoman Warders. If the school groups come in the morning for an hour long guided tour, spend an hour and a half seeing the different parts of the Tower, and a half hour for lunch, the teachers would be less likely to let their student walk about freely. The problems occurring with unsupervised students in the Tower could begin to diminish as a result, allowing all visitors a safer, more educational, and enjoyable visit.

Along with the development of the Centre, an increase in teaching staff will be desirable. The new Centre will have the ability to accommodate three classes of thirty students at one time. With this new capacity, more schools will be able to attend. The addition of a French-speaking teacher would prove useful. Approximately one quarter of the general questionnaires returned to us were by French teachers. This does not include the large amount of French teachers that we approached who could not take our questionnaire because they did not understand it. If the Education Centre offered their

workshops in French, there would be an entirely new group of potential users. In addition, hiring specialist teachers, such as science and infant teachers, would benefit the Centre. A science teacher could introduce the new perspective of the materials used in making arms and armour. An infant teacher would be more specialized for teaching the younger children (ages 4-6) than the current staff. The addition of these teachers would allow for a better overall Education Centre experience.

All of our ideas are based upon the future expansion of the Education Centre. This additional capacity will accommodate an increase in demand created through web registration and student tours. A database of schools would allow the Centre to send out mailings that increase the level of communication between the museum and school. An increased teaching staff to accommodate a wider range of ages and languages would also increase demand for the Education Centre. Aside from the obvious and welcome societal benefits, an increase in the frequency of outreach programme sessions will include benefits for the Centre itself by promoting its existence to new audiences and communities. The suggestions discussed in this project will allow the Education Centre at the Tower of London to extend its mission to a larger portion of the population.

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8.0 Appendices

8.1 Appendix A – Sponsor Background

Royal Armouries at the HM Tower of London

The Mission Statement, Objectives and Statutory Duties of the Royal Armouries as established in The National Heritage Act 1983.

The Royal Armouries Mission Statement:

To promote in the UK and worldwide the knowledge and appreciation of arms and armour and of the Tower through the collections of the museum and the expertise of staff.

Objectives:

- To help enhance the Tower as a visitor attraction
- To release space and make possible developments which will enable the Tower-related part of the collection remaining in the Tower to be displayed to the highest standards in its proper context.
- To generate increased income for both the Royal Armouries and the Historic Royal Palaces Agency

The Statutory Duties- The National Heritage Act 1983 lays down that the Trustees must:

- care for, preserve and add to the objects in their collections
- secure that the objects are exhibited to the public
- secure that the objects are available for study and research
- maintain a record relating to their collections, to arms and armour in general and to the Tower
- generally promote the public's enjoyment and understanding of arms and armour

To help fulfill these duties the Act says that the Trustees may:

- provide education, instruction and advice
- enter into contracts and other agreements
- acquire and dispose of land and property
- charge for admission to their collections displayed outside the Tower
- make limited disposals from their collections
- lend and borrow objects

SOURCE: The Official Royal Armouries Web Site.

Available at <http://www.armouries.org.uk/interface/about.html>

8.2 Appendix B - Work Plan

J – Justyn Garon
 E – Edward Giarnese
 R – Robert Skiba

Tasks	Dates	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
Orientation in London	09-Mar	EJR						
Meeting with Irene Davies	12-Mar	EJR						
Discussion of project proposal	12-Mar	EJR						
Presentation to liaison, agency, and advisors	14-Mar	EJR						
Begin survey distribution	15-Mar	EJR						
Revised methodology to advisors	15-Mar	EJR						
Continue survey distribution			EJR					
Begin database compilation			EJR					
Begin survey data analysis			EJR					
Meeting with liaison and advisors	22-Mar		EJR					
Interview with Irene Davies & Mark Folwell	23-Mar		EJR					
Revised intro, background, methodology...	23-Mar		EJR					
Interview with Dorothy Lawson	27-Mar			EJR				
Complete survey distribution			EJR	EJR				
Complete database compilation			EJR	EJR				
Continue survey data analysis			EJR	EJR				
Meeting with liaison and advisors	29-Mar			EJR				
Continue survey data analysis			EJR	EJR	EJR	EJR		
Group meeting to update overall project	13-Apr					EJR		
Complete survey data analysis			EJR	EJR	EJR	EJR	EJR	
Begin preparation for final presentation							EJR	
Group meeting to finalize project	20-Apr						EJR	
Write final report		EJR	EJR	EJR	EJR	EJR	EJR	EJR
Final presentation	24-Apr						EJR	EJR

8.3 Appendix C – Surveys
8.3.1 – General Questionnaire

Royal Armouries Education Service
HM Tower of London
Teacher Evaluation of Education Centre Marketing Strategies

Name Date
 School Year
 group
 Number of students in tour group

Is this your first visit to the Tower of London? Yes No

If not, approximately how many visits have you made in the past?

What convinced you to visit the Tower of London?

Are you familiar with our Education Centre? Yes No

If so, how did you hear about it? (circle all that apply)

Journal Friend Colleague
 Magazine Relative Other (specify) _____

Were you informed about the Education Centre at the time of your tour booking? Yes No

I would be deterred from booking a lesson at the Education Centre by the following:
 (Circle the number that best describes your view)

Key: 1 = Strong Deterrent 2 = Mild Deterrent 3 = No Deterrent

28 day advance booking requirement	1		2		3
Lack of time during your visit (i.e. transportation issues)	1		2		3
Tower of London admission fee	1		2		3
Education Centre admission fee	1		2		3
Lack of interest from students	1		2		3
Tour alone is considered to be adequate	1		2		3

Which of the following items would you consider utilising if offered? (tick all that apply)

Outreach Programme - presentations by Tower representatives at your school
 Teachers' seminars - quarterly presentations for teachers on what the Tower has to offer
 Web registration - the ability to book tours and workshops online

Do you have any suggestions to improve the visibility of the Education Centre?

8.3.2 – Assessment Questionnaire

**Royal Armouries Education Service
HM Tower of London
Teacher Evaluation of Education Centre**

Name: Date of visit:
School: Year group:

**** Please turn over for additional space if necessary.**

What convinced you to book a lesson with the Education Centre?

What was your overall impression of the Education Centre?

Do you feel the workshop was a beneficial use of your and your students' time? Yes No

Why or why not?

What aspects of the workshop were most valuable?

What aspects of the workshop were least valuable?

Can you suggest any improvements in the workshop?

Do you feel the educational packets provided will prove useful? Yes No

Why or why not?

Do your students wish to discuss the content of the workshop further? Yes No

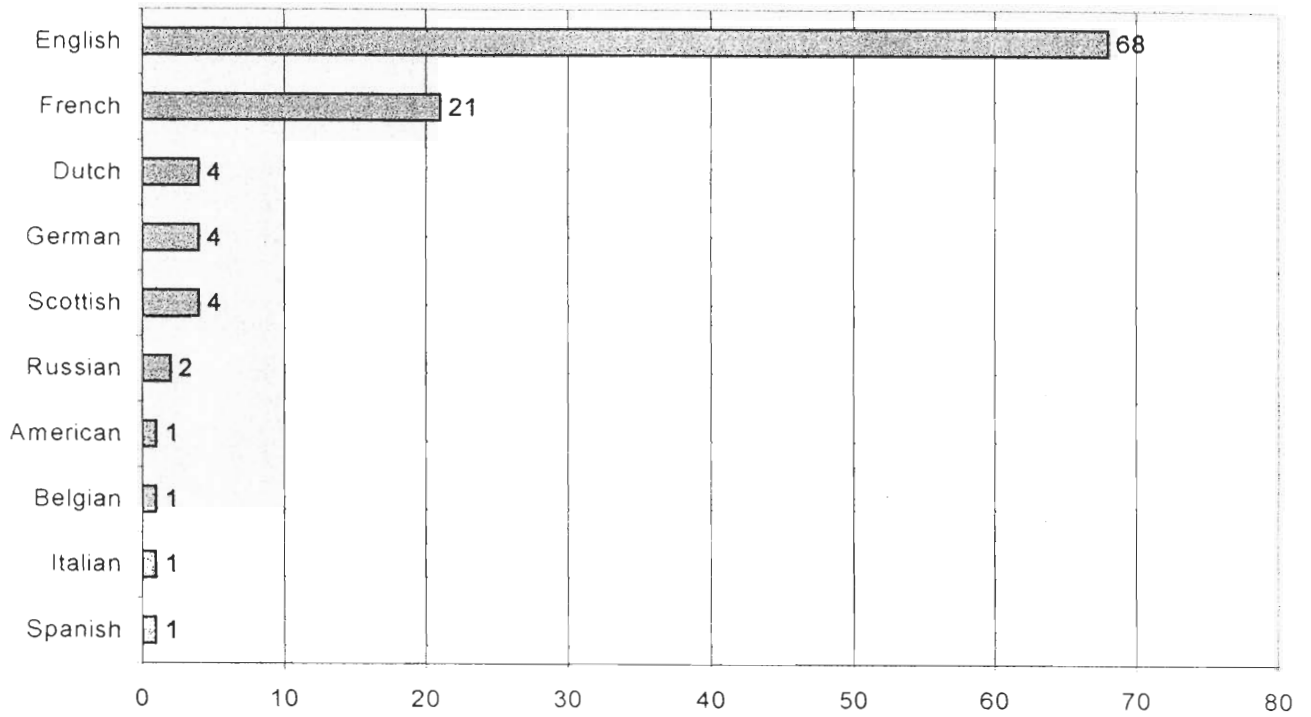
Would you consider a return visit? Yes No

Why or why not?

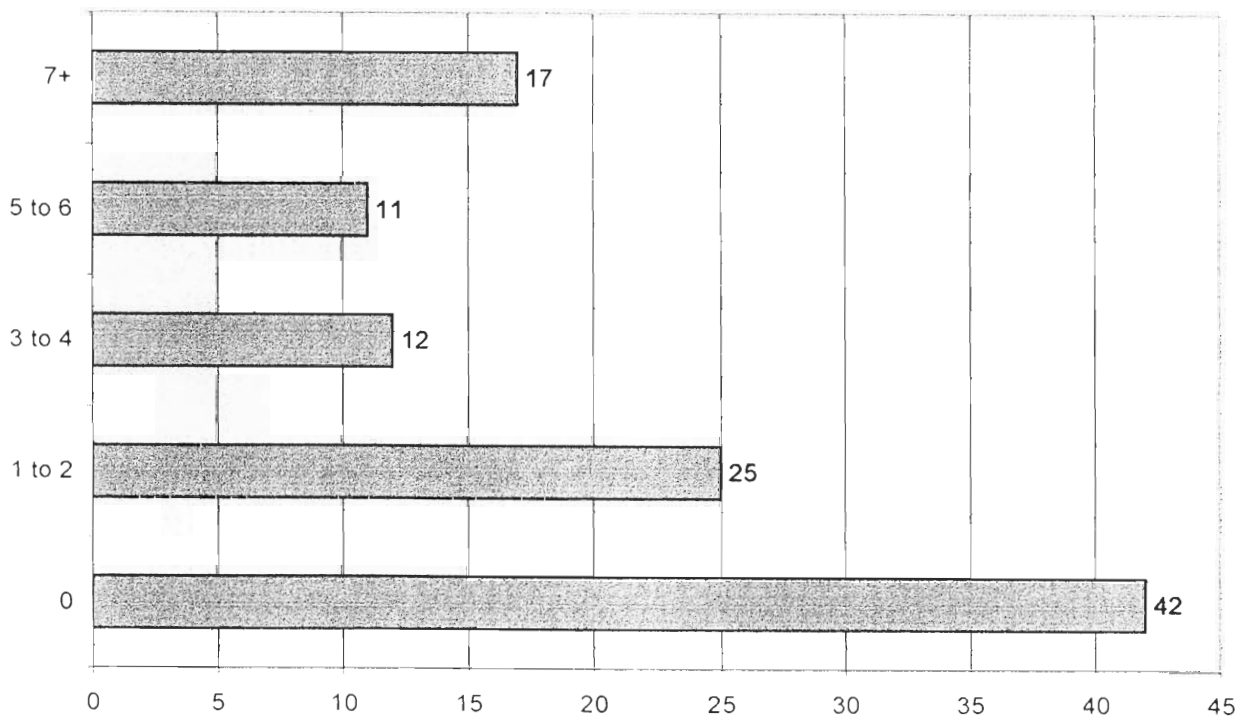
Do you have any other comments or suggestions for change?

8.5 Appendix D – General Questionnaire Charts

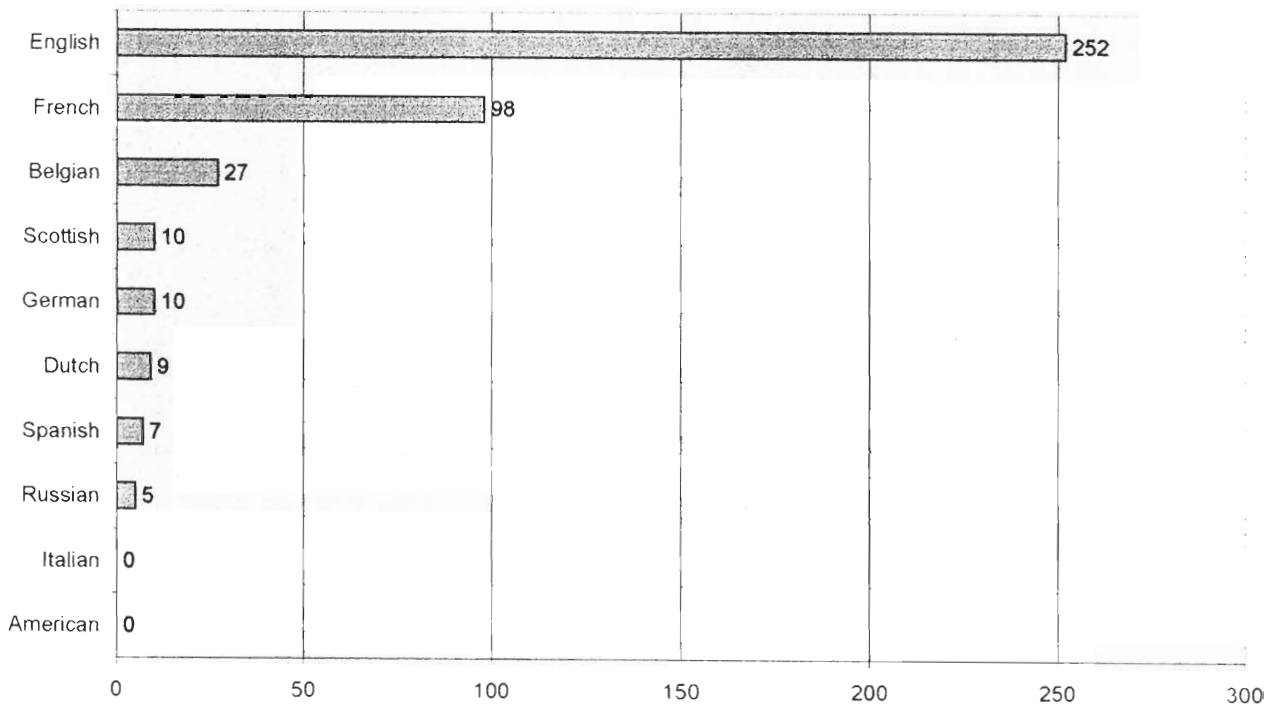
Nationalities of visiting teachers



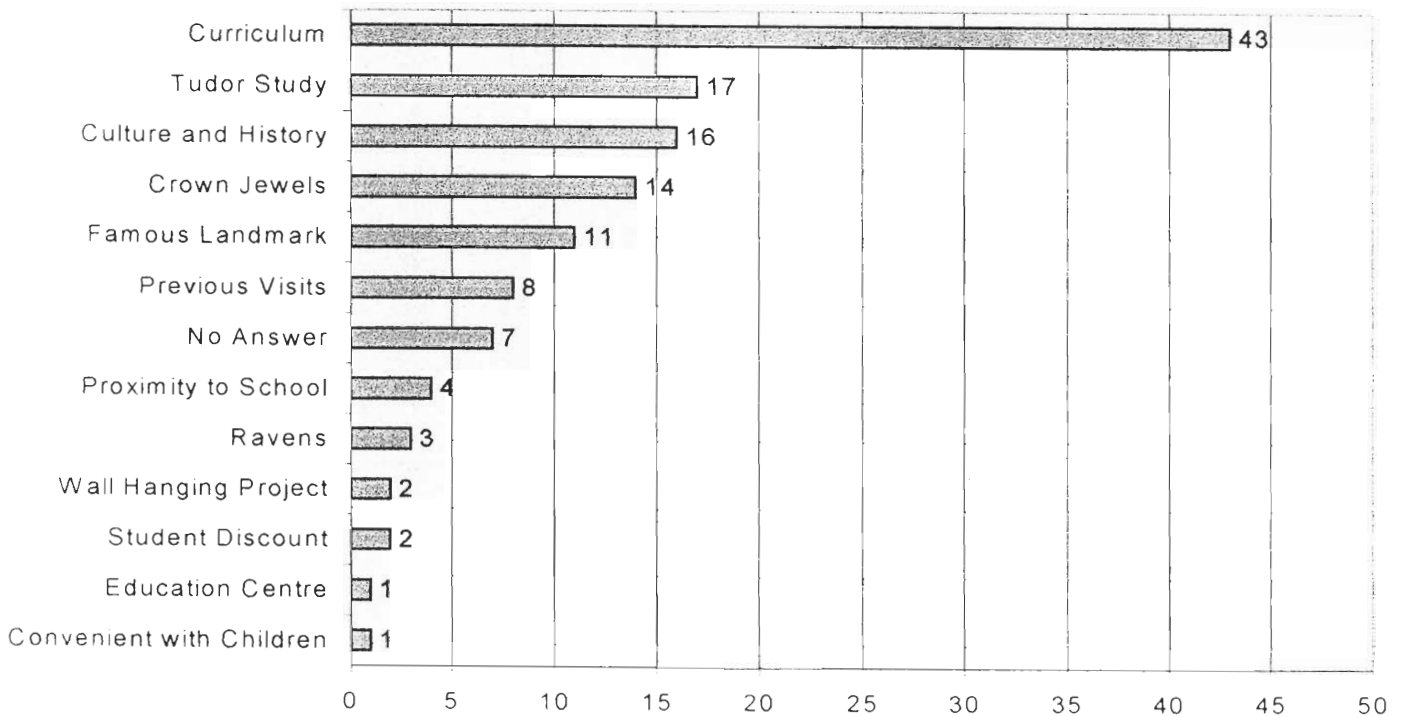
Number of previous visits by teachers



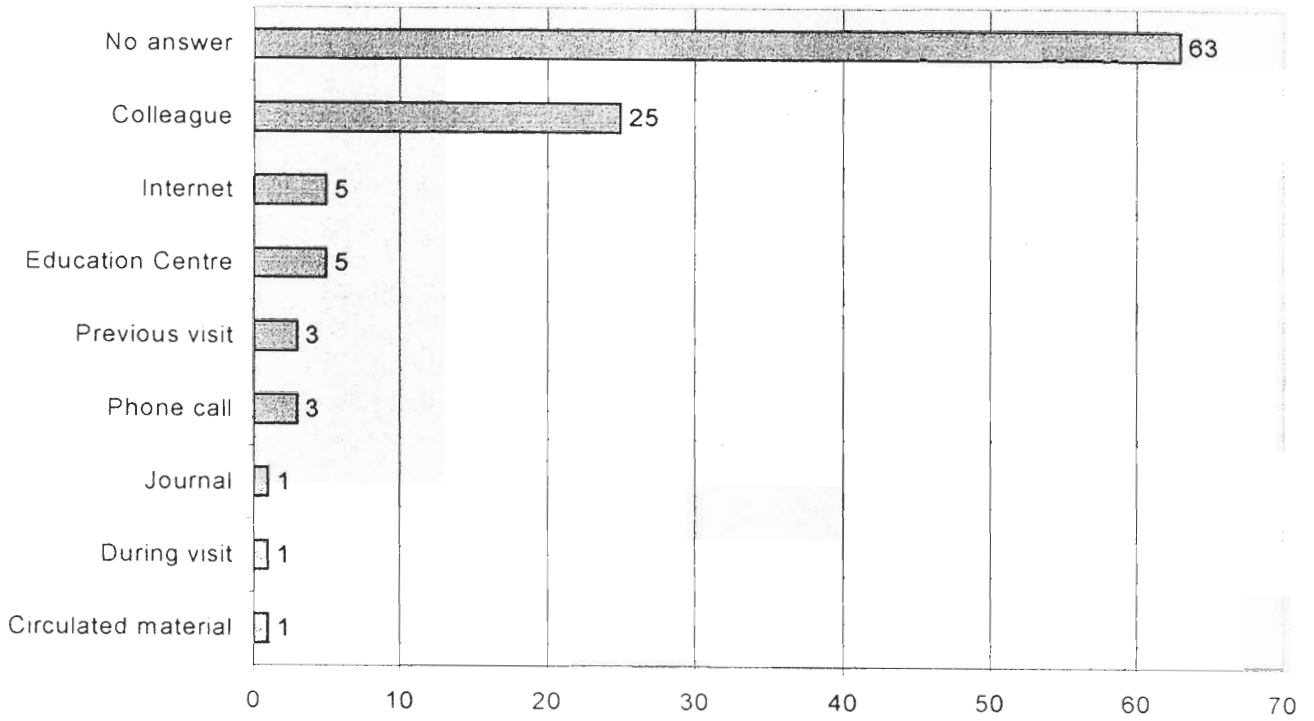
Total number of previous visits per nationality



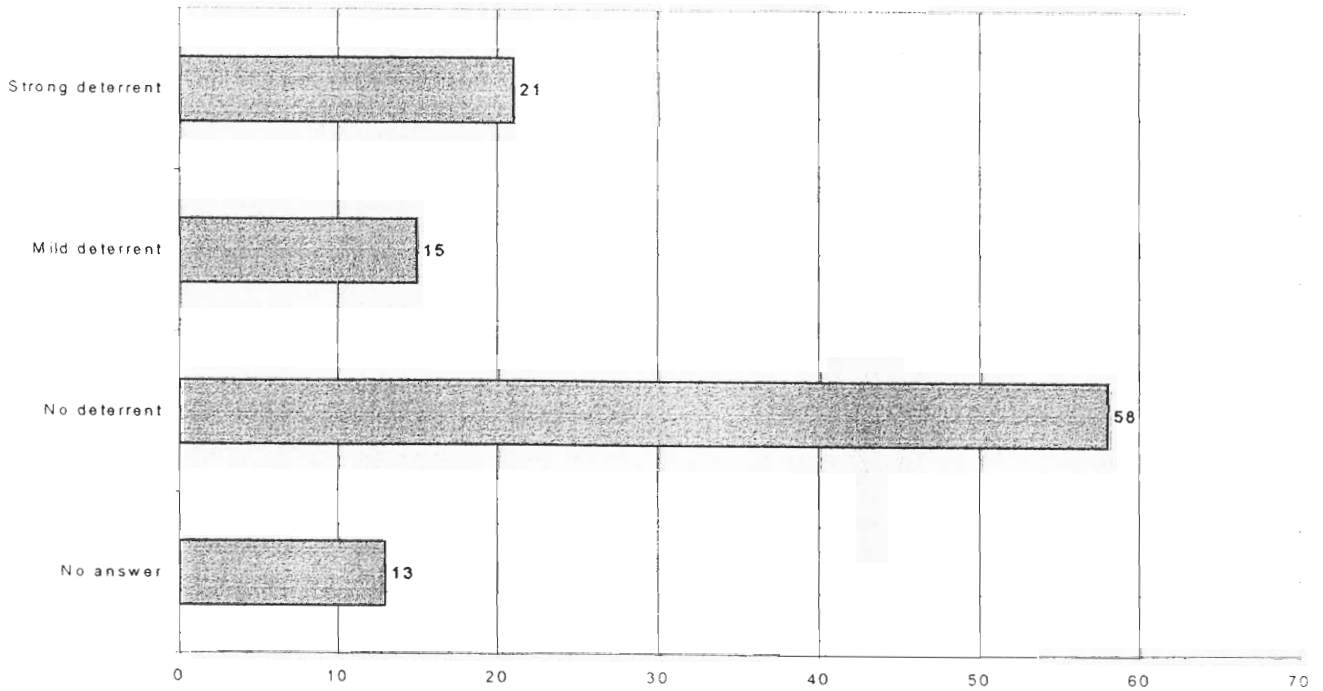
What convinced you to visit the Tower of London?



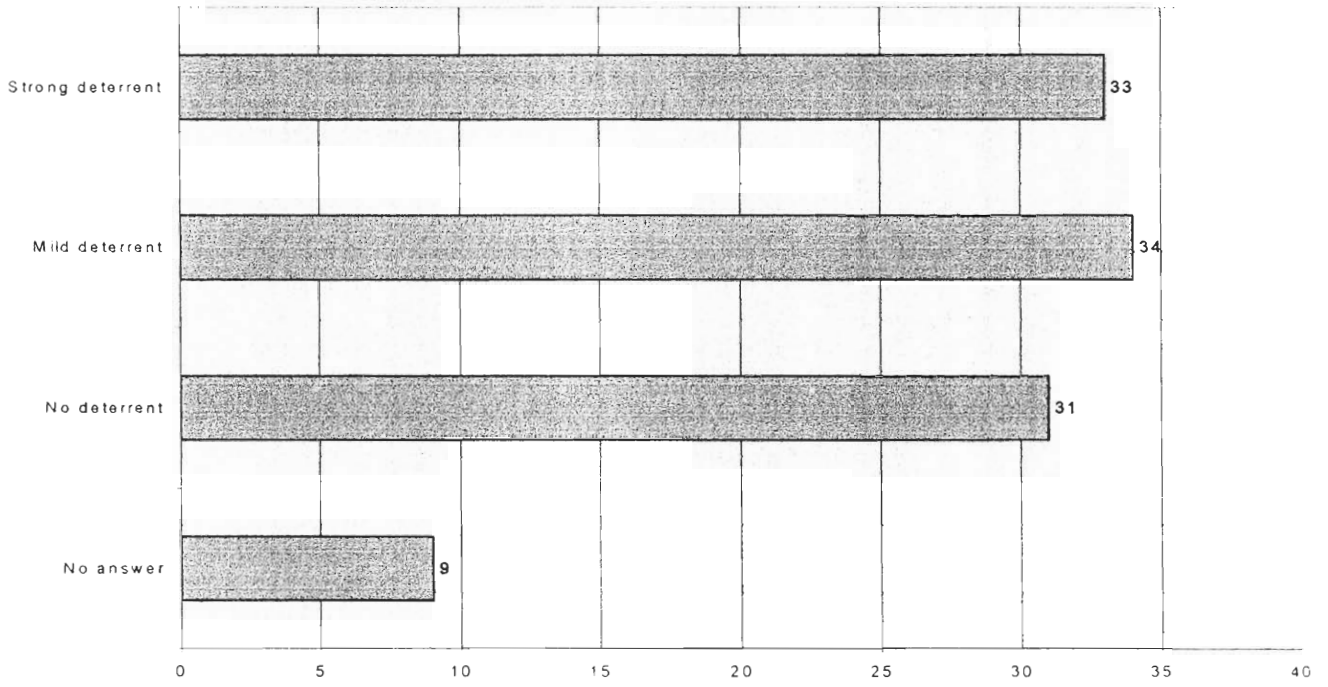
How did you hear about the Education Centre?



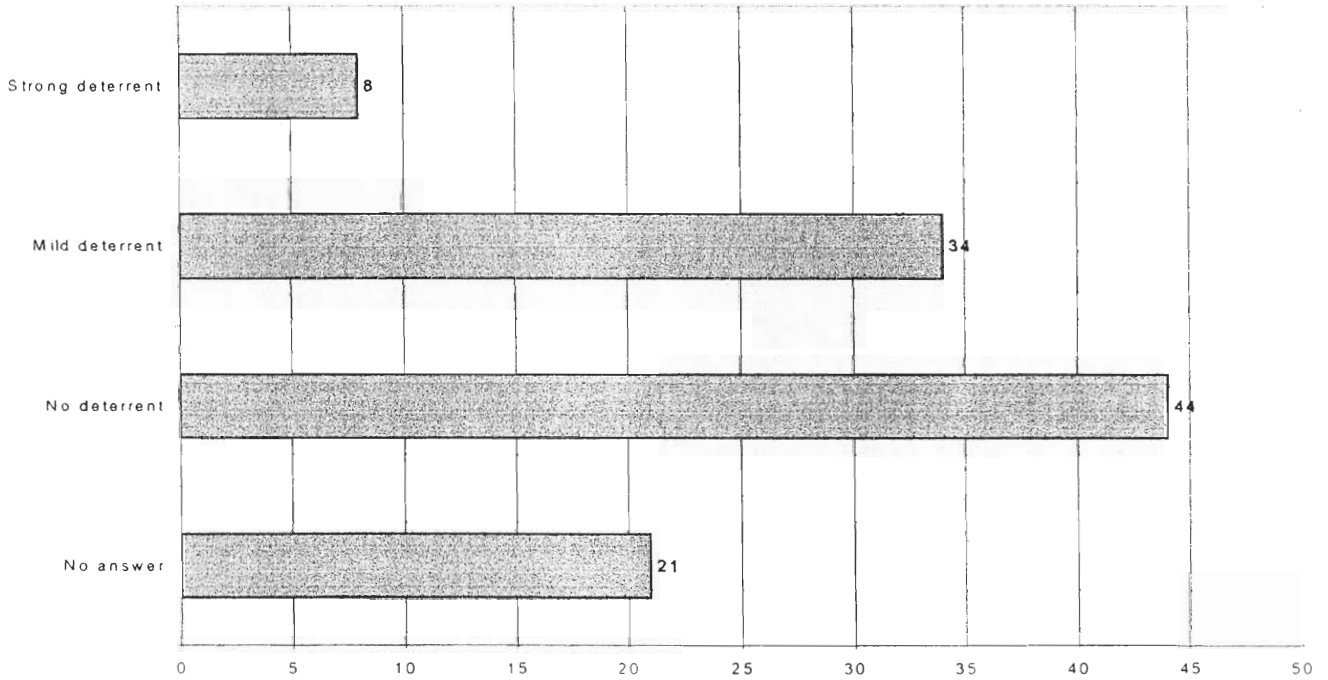
28 day advance booking requirement



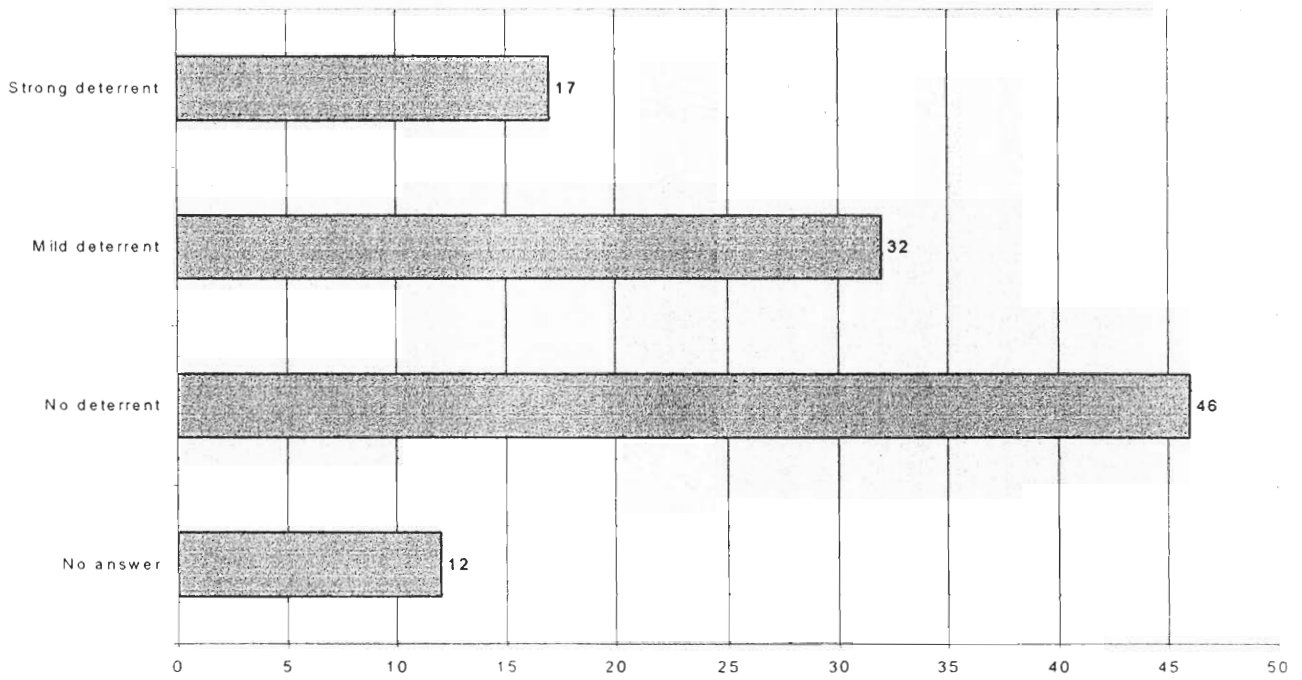
Lack of time during visit



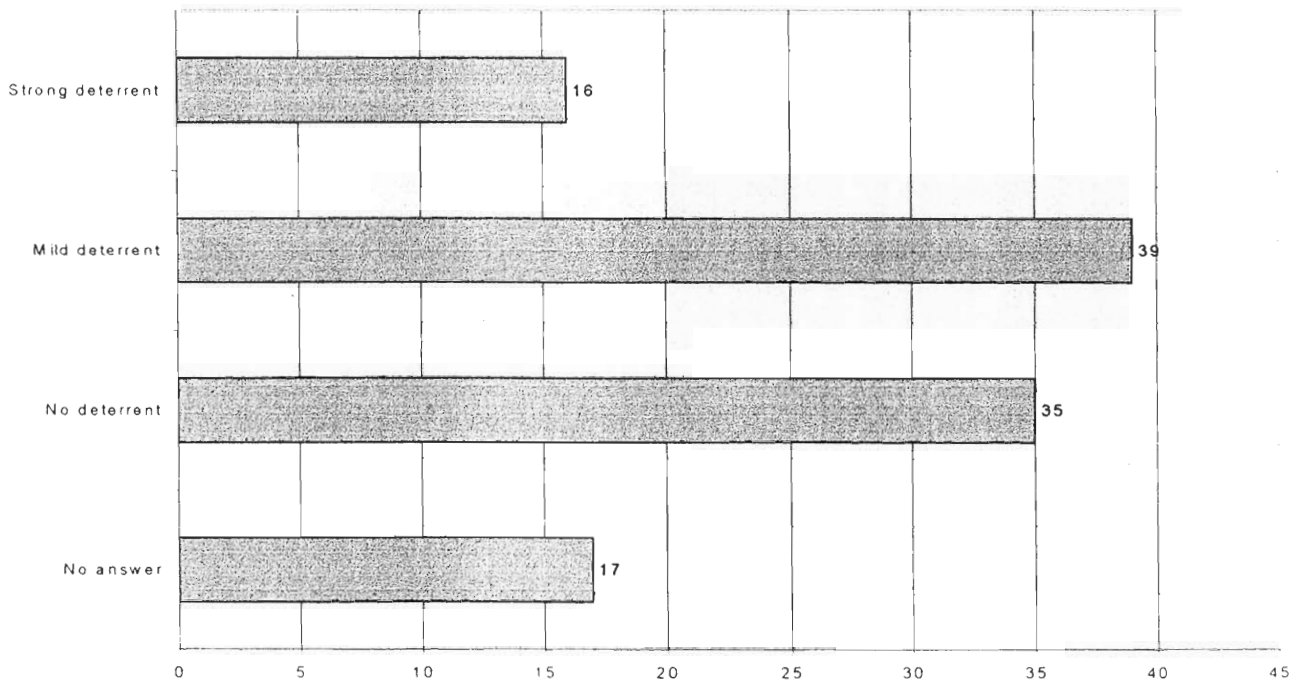
Tour alone is considered adequate



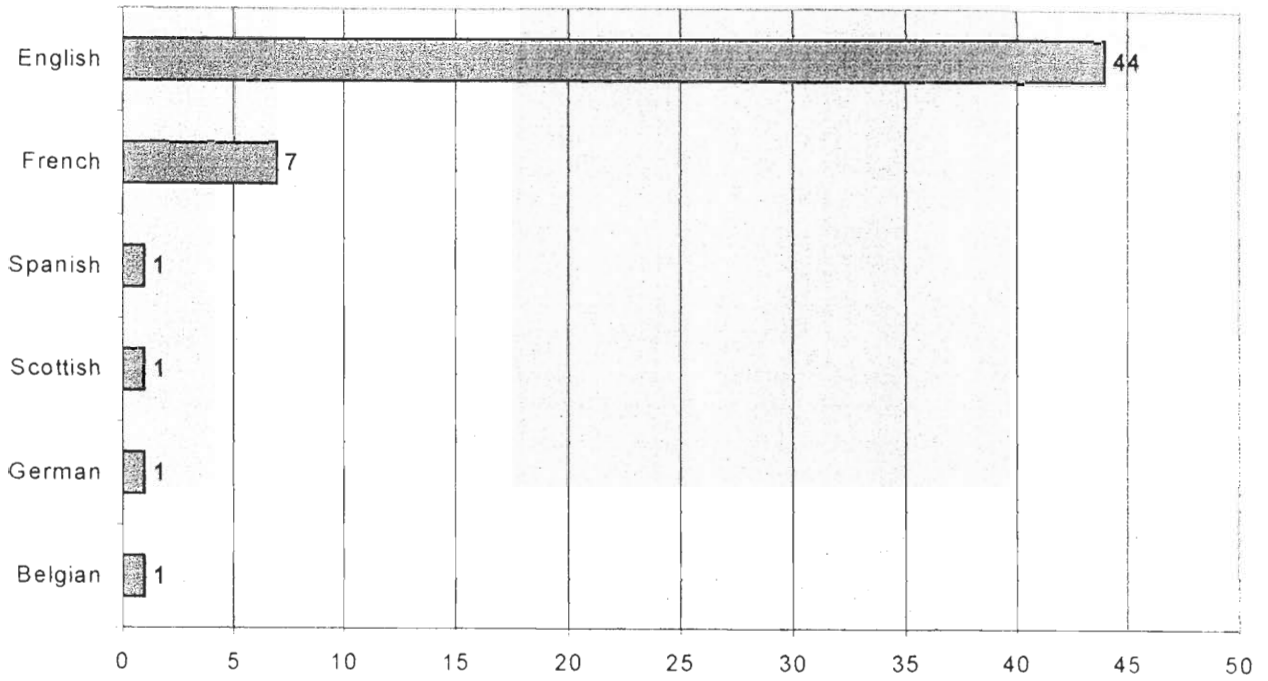
Tower of London admission Fee



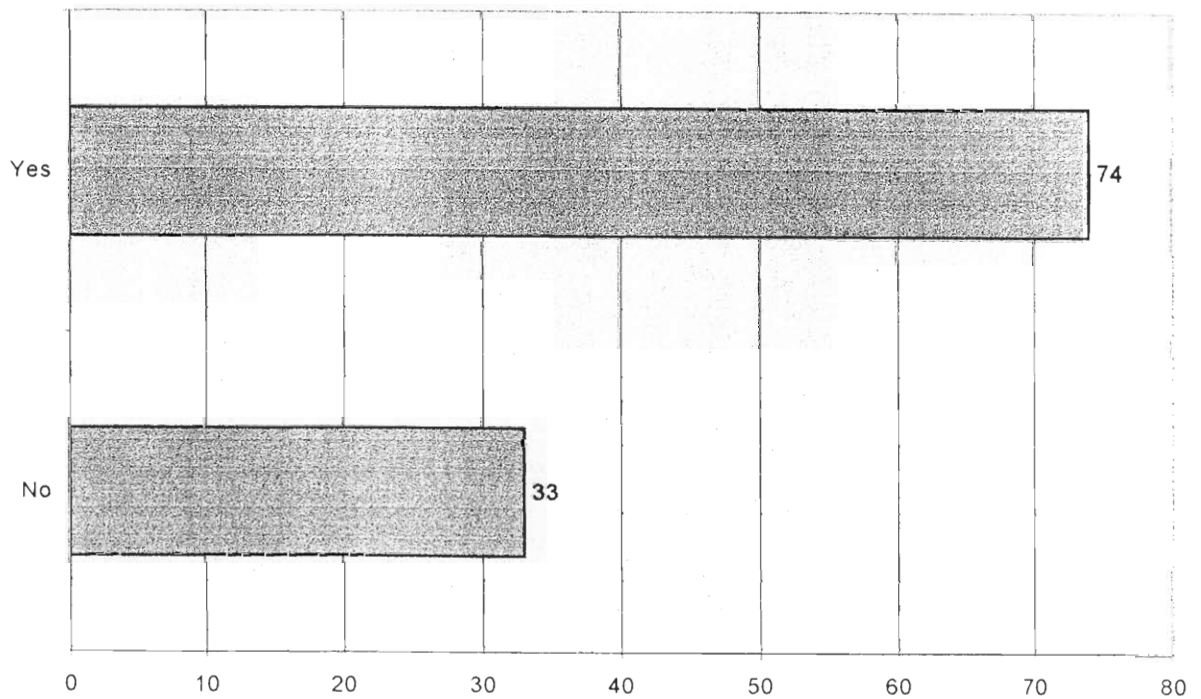
Education Centre admission fee



Outreach programme breakdown by nationality

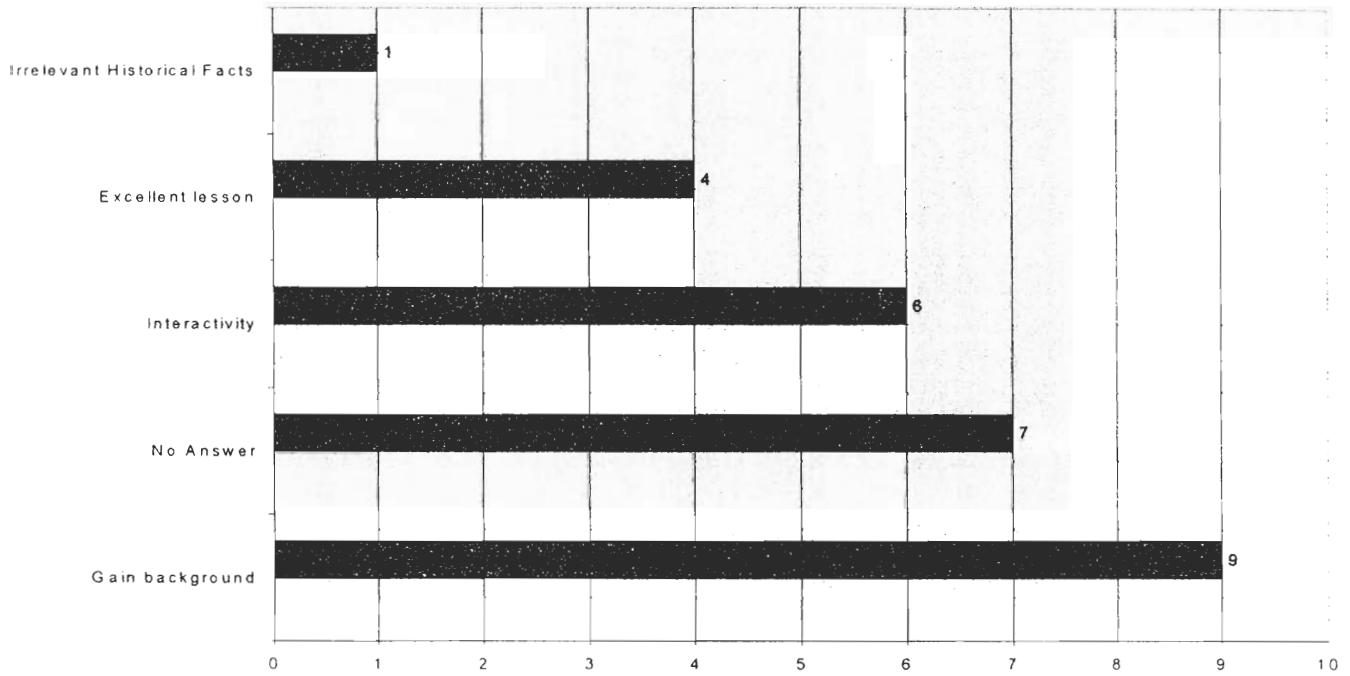


Web registration

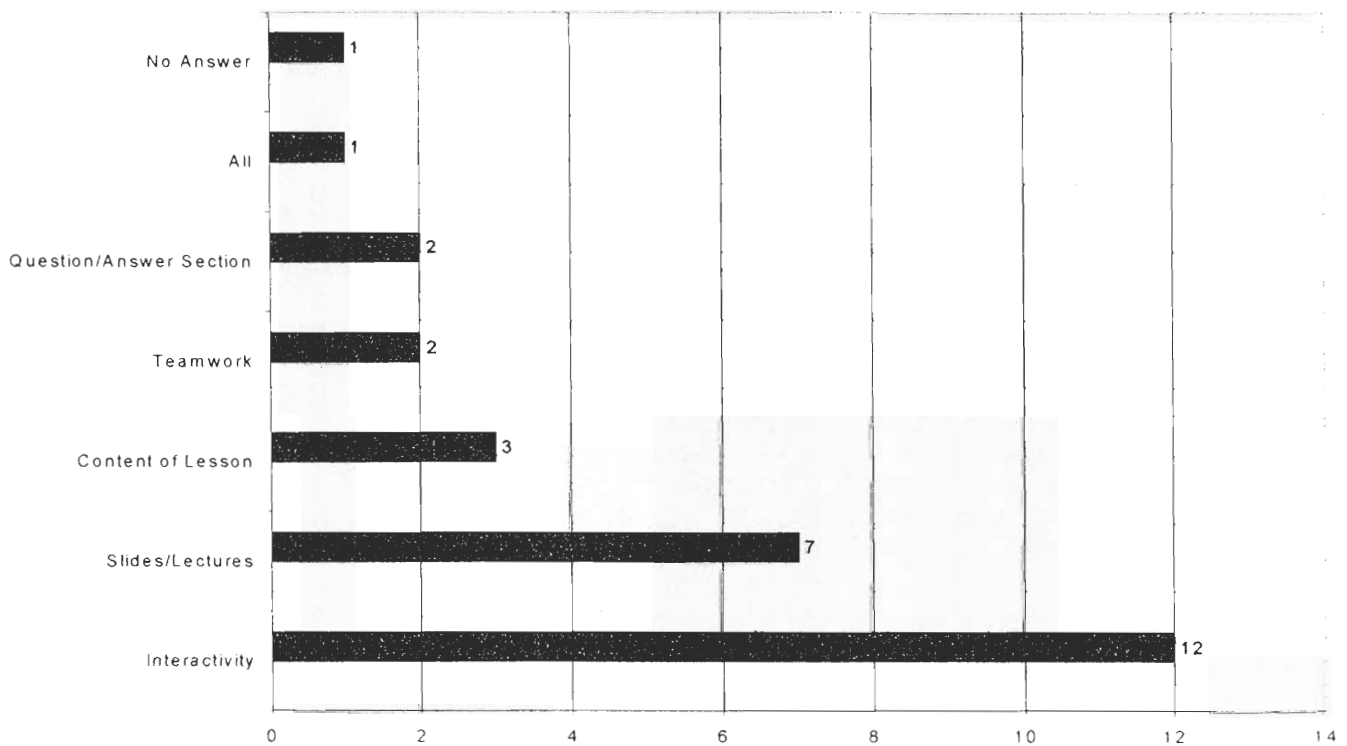


8.6 Appendix E – Assessment Questionnaire Charts

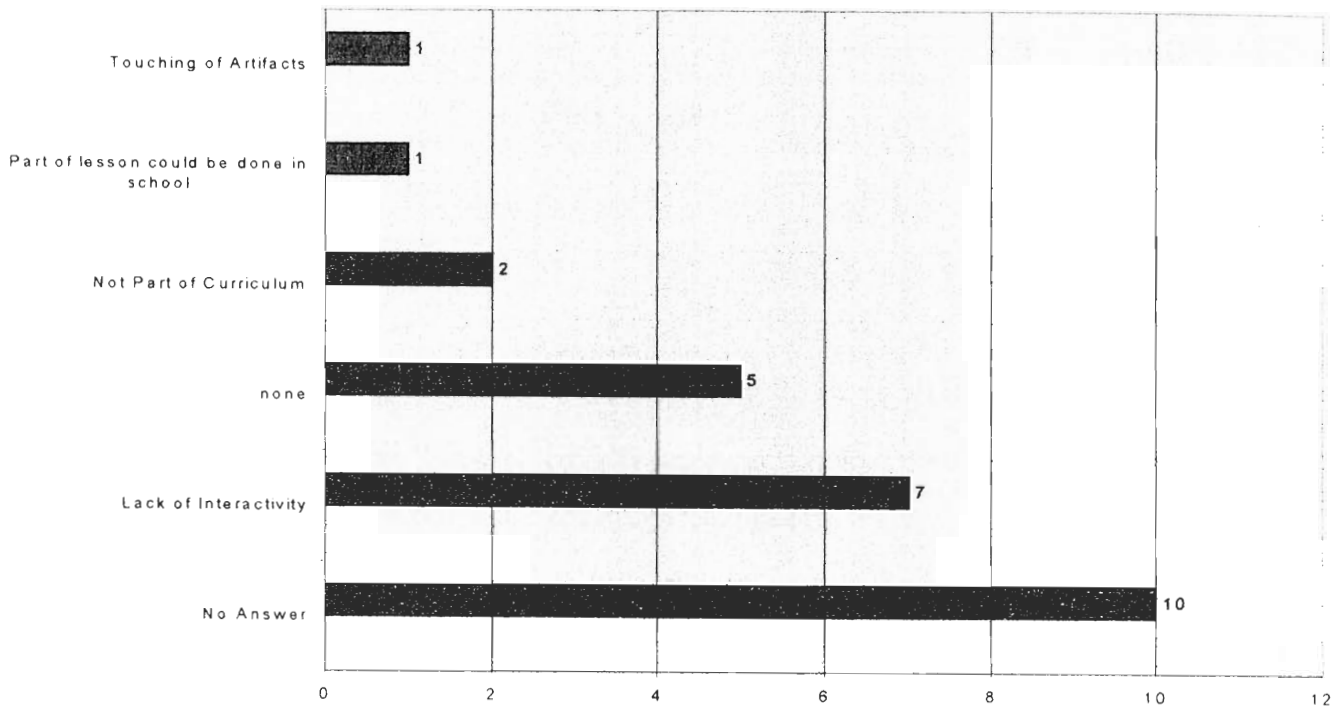
Was the Education Centre a beneficial use of time?



What aspects of the lesson were the most valuable?



What aspect of the lesson was least valuable?



Can you suggest any improvements in the workshop?



8.7 Appendix F - Questionnaire Tables

General Questionnaire Tables

Is this your first visit to the Tower of London?	Yes 39.3%	No 60.7%	Unanswered 0.0%
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Are you familiar with our Education Centre?	Yes 27.1%	No 72.0%	Unanswered .9%
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Were you informed about the Education Centre at the time of your tour booking?	Yes 51.4%	No 31.8%	Unanswered 16.8%
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I would be deterred from booking a lesson at the Education Centre by the following:

28 day advance booking requirement			
Strong Deterrent 19.6%	Mild Deterrent 14.0%	No Deterrent 54.2%	No Answer 12.1%

Lack of time during your visit			
Strong Deterrent 30.8%	Mild Deterrent 31.8%	No Deterrent 28.9%	No Answer 8.4%

Tower of London admission fee			
Strong Deterrent 15.9%	Mild Deterrent 29.9%	No Deterrent 42.9%	No Answer 11.2%

Education Centre admission fee			
Strong Deterrent 14.9%	Mild Deterrent 36.4%	No Deterrent 35.8%	No Answer 15.9%

Lack of interest from students			
Strong Deterrent 13.1%	Mild Deterrent 21.5%	No Deterrent 53.3%	No Answer 12.1%

Tour alone is considered adequate			
Strong Deterrent 7.4%	Mild Deterrent 31.8%	No Deterrent 41.1%	No Answer 19.6%

Which of the following would you consider utilising if offered?		
Outreach Programme 51.4%	Teachers' Seminars 51.4%	Web Registration 69.2%

Assessment Questionnaire Tables

Do you feel the workshop was a beneficial use of your and your students' time?	Yes 96.3	No 3.7%	Unanswered 0.0%
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Do you feel the educational packets will prove useful?	Yes 81.4%	No 7.4%%	Unanswered/None Provided 11.1%
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Do your students wish to discuss the content of the workshop further?	Yes 44.4%	No 18.5%	Unanswered 37.0%
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Would you consider a return visit?	Yes 77.8%	No 18.5%	Unanswered 3.7%
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8.8 Appendix G – Information from Liaison

**Royal Armouries Education Service
HM Tower of London
Evaluation of Centre-led Lessons**

School Year-group.....

Title of workshop or lesson	
Reason for your visit	

Did you attend an in-service training day at the Education Centre before bringing your school party?
 Yes No

Please circle the number which you think best describes your views.

Key: 1 = Strongly agree 2 = Agree 3 = Disagree 4 = Strongly disagree

The member of staff was fully prepared	1	2	3	4
Objectives of the lesson were clear	1	2	3	4
Activities were appropriate to the lesson	1	2	3	4
Activities successfully involved group members	1	2	3	4
General content provided ideas for application back in the classroom	1	2	3	4
There were opportunities to meet my/our specific needs	1	2	3	4
The staff were knowledgeable	1	2	3	4
In general the lesson was useful	1	2	3	4

What aspects of the lesson were most valuable?

What aspects were least valuable?

What do you think your class learned as a result of the lesson and experience?

Suggestions for changing the lesson.

**Royal Armouries Education Service
HM Tower of London
Evaluation of printed materials**

School..... Year group.....

Did you use the materials in the teachers' pack?

Please tick as many boxes as apply.

- before your visit
- during your visit
- after your visit
- not at all

How did you use the materials?

Please tick as many boxes as apply.

- as a stimulus to discussion?
- to create your own worksheets?
- used them as they are?

Overall usefulness of the pack:

Please tick the box that best describes your views

	Very useful	Useful	Of some use	Of little use	Did not use
Programme and Services booklet					
A brief history and guide for teachers					
The Timeline					
The picture sheets					
The curriculum strategy sheets					
The worksheets					

Your visit

Please tick where applicable:

- Did you take you own class/es round the Tower?
- Did you have a lesson in the education centre?
- The education centre lessons were fully booked.

<p>What other printed materials would you like us to produce?</p>	
--	--

We are considering creating a Web-site featuring the armours of the Royal Armouries Museum. Do you think you or your class would visit it?

HOW TO BOOK AN EDUCATIONAL VISIT

Telephone Visitor Services for provisional booking on 020 7488 5658.
Special entry of £2.00 for pupils under 18 and £4.00 for students 18 and over, is only available to those who book and pay in advance.

ENTRY TO TOWER ONLY

Confirm in writing on Tower booking form within 28 days of making a provisional booking.
Include payment or pay at least 28 days in advance.

YOU RECEIVE
Educational Group Ticket.
Planning visit voucher.

BOOKING A SESSION

Check availability of dates and sessions with Booking Officer (020 7488 5658).
Confirm in writing on Tower booking form **and** Education Centre form within 28 days. Include payment or pay at least 28 days in advance.

YOU RECEIVE
Educational Group Ticket.
Planning visit voucher.
Map for Education Centre.
Confirmation of session title, dates and times. Any relevant session notes.

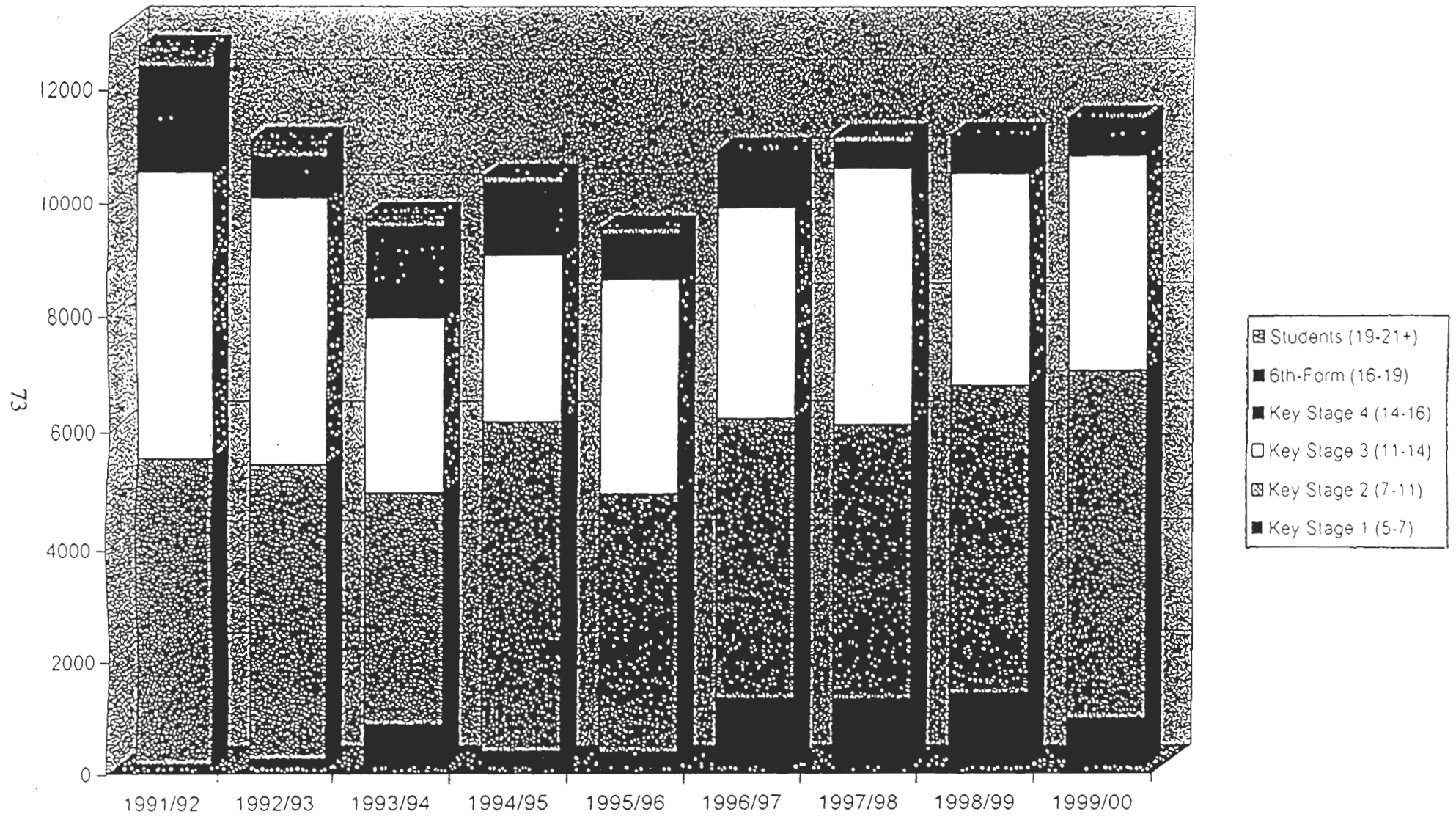
Please make cheques, credit card authorisations or money orders payable to:
Historic Royal Palaces.
You may make one combined payment for entry and booked session. All prices are subject to change.

Please send booking form and payment to:
Education Office/Visitor Services Department
Waterloo Block
H.M. Tower of London
London EC3N 4AB

REFUNDS AND CANCELLATIONS

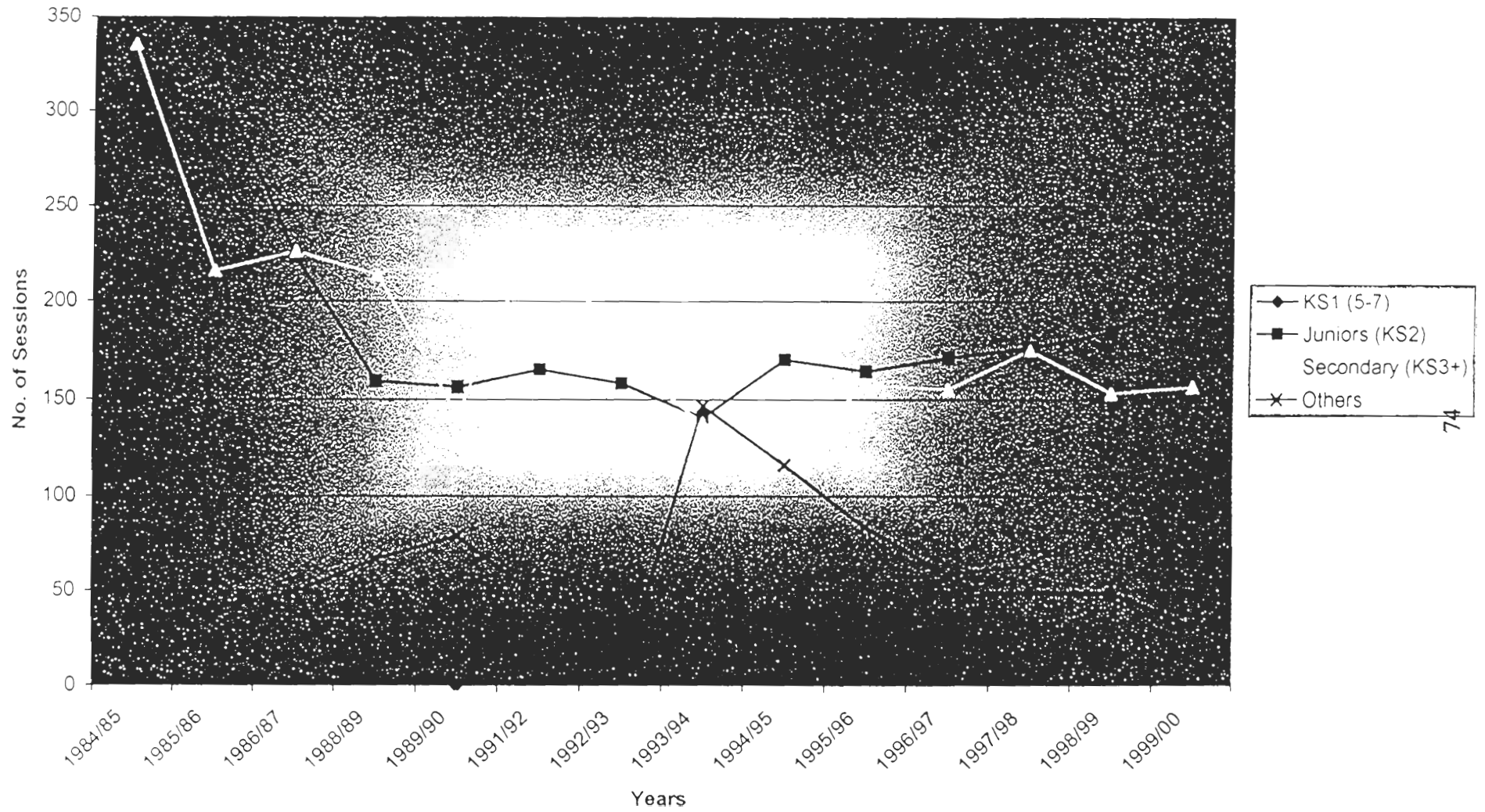
Refunds can only be given up to one calendar month before the date of the booking.
We will be unable to give refunds for children who are absent on the day.
If we have to cancel a session which carries a payment, a full refund for that session will be made.
Extra children (up to a maximum of 5) can be paid for on the day at the Group Ticket Office.

Schools Attendance 1991-2000

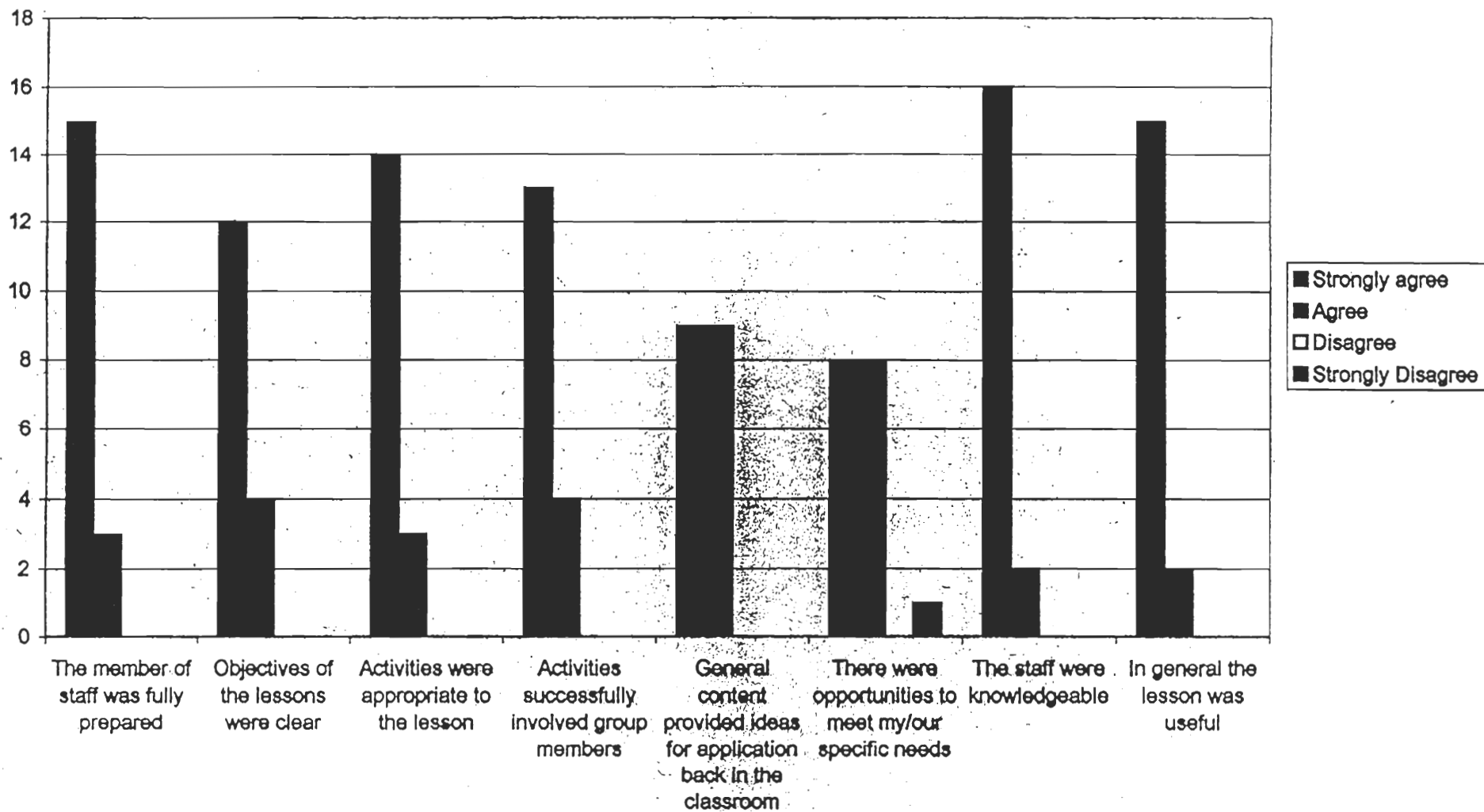


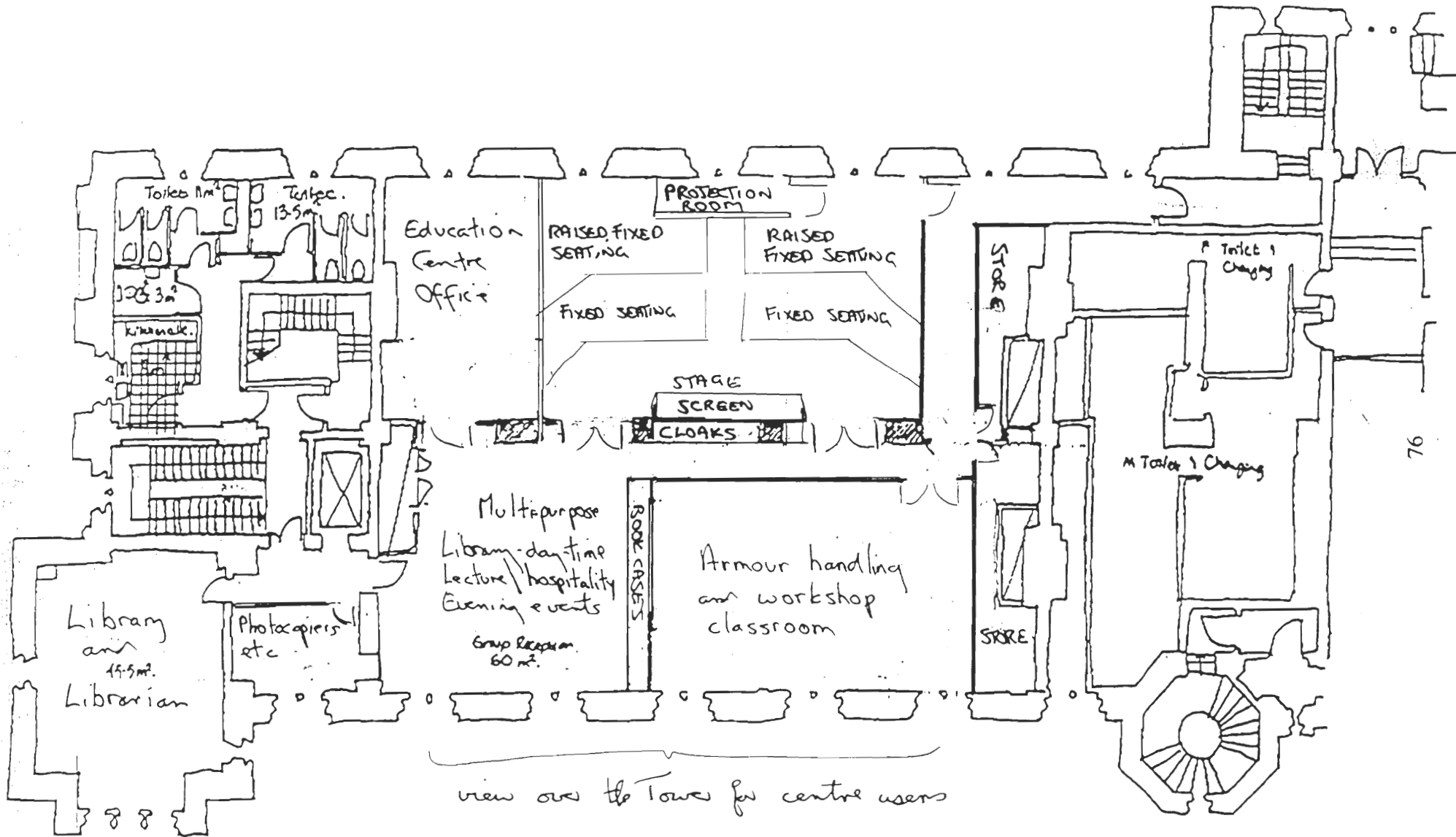
73

Education Sessions 1984-99, Trends



Royal Armouries Education Service, HM Tower of London, Evaluation of Centre-led Lessons





8.9 Appendix H – Form for Scheduling Tour Groups

**TOWER OF LONDON
APPLICATION FOR AN EDUCATIONAL VISIT (2000/2001)**

Name of Group Leader:	
Name of Educational Establishment:	
Address:	
Postcode:	
L.E.A. (U.K. Schools only)	
Telephone Number:	
Proposed date of visit:	
1st choice:	
2nd choice:	
Estimated time of arrival:	
Group composition:	
Number of teachers/adults:Free (1:10 ratio)@ £9.55 =
Number of pupils (under 18)@ £2.00 =
Number of students (over 18)@ £4.00 =
Total payment due:	
Method of payment: (Please make cheques payable to: HISTORIC ROYAL PALACES)	
Topic of Study:	
Title of the session booked with the RA Education Centre: (if applicable)	
Date of free preliminary visit (not Bank Holidays)	
Please state any special needs:	

THE TOWER OF LONDON EDUCATION CENTRE - BOOKING FORM

Date of visit	Materials sent	Confirmation sent	Date booking taken																																														
<p>Contact _____</p> <p>School/College _____</p> <p>Address _____</p> <p>_____</p> <p align="center">Postcode _____</p> <p>Telephone _____</p> <p>Type of school Maintained Direct grant Independent</p>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>Choice of subject</td> <td align="center">1</td> <td align="center">2</td> <td align="center">3</td> </tr> <tr> <td>Choice of date</td> <td align="center">1</td> <td align="center">2</td> <td align="center">3</td> </tr> </table>	Choice of subject	1	2	3	Choice of date	1	2	3	<p>Topic _____</p> <p>Start _____ Finish _____</p> <p>Number in group _____ Age _____</p> <p>Start _____ Finish _____</p> <p>Number in group _____ Age _____</p> <p>Special Requirements</p> <p>ESL Disabled-Physically</p> <p>MLD/SLD Hearing impaired</p> <p>Visually impaired Any other</p>	<p>Time booked</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>8.00</td><td>8.30</td></tr> <tr><td>9.00</td><td>9.15</td></tr> <tr><td>9.30</td><td>9.45</td></tr> <tr><td>10.00</td><td>10.15</td></tr> <tr><td>10.30</td><td>10.45</td></tr> <tr><td>11.00</td><td>11.15</td></tr> <tr><td>11.30</td><td>11.45</td></tr> <tr><td>12.00</td><td>12.15</td></tr> <tr><td>12.30</td><td>12.45</td></tr> <tr><td>1.00</td><td>1.15</td></tr> <tr><td>1.30</td><td>1.45</td></tr> <tr><td>2.00</td><td>2.15</td></tr> <tr><td>2.30</td><td>2.45</td></tr> <tr><td>3.00</td><td>3.15</td></tr> <tr><td>3.30</td><td>3.45</td></tr> <tr><td>4.00</td><td>4.15</td></tr> <tr><td>4.30</td><td>4.45</td></tr> <tr><td>5.00</td><td>5.15</td></tr> <tr><td>5.30</td><td>6.00</td></tr> </table>	8.00	8.30	9.00	9.15	9.30	9.45	10.00	10.15	10.30	10.45	11.00	11.15	11.30	11.45	12.00	12.15	12.30	12.45	1.00	1.15	1.30	1.45	2.00	2.15	2.30	2.45	3.00	3.15	3.30	3.45	4.00	4.15	4.30	4.45	5.00	5.15	5.30	6.00
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<p>Marketing</p> <p>Mailing List-Programme _____</p> <p>Previous visitor _____</p> <p>T.E.S. _____</p> <p>Child Education _____</p> <p>Junior Education _____</p> <p>Do you wish to be on our mailing list? <input type="checkbox"/> tick box</p>	<p>Notes</p> <p>_____</p> <p>_____</p> <p>_____</p>																																																

THE "STEEL MUSEUM" IS BUILT

When his dream was finally realized in 1931, Higgins' "Steel Museum" was housed along with the Worcester Pressed Steel offices in a new, state-of-the-art, glass and steel curtain wall building. Designed by Joseph D. Leland Architects of Boston, the structure cost over \$300,000. The main gallery was inspired by the many noble houses and castles Higgins had visited in Europe. This gothic-style Great Hall was divided into "Ancient" and "Modern" wings, with exhibits showing both historical and modern steel products, ranging from Renaissance suits of armor to a Piper Cub aircraft that was suspended from the vaulted ceiling. (The plane was removed in the early 1970s when the modern displays were eliminated.)

After touring the museum, visitors were invited to watch the manufacture of modern steel products in Worcester Pressed Steel's adjoining factory, which Higgins called "the biggest exhibit of them all."



The Higgins Armory Museum, July 1940.



John Higgins explains the details of the Teuffenbach armor to a young visitor. Photo taken in 1946 by Augie Anderson of Auburn, Mass.

"IF WE CAN STRIKE A SPARK..."

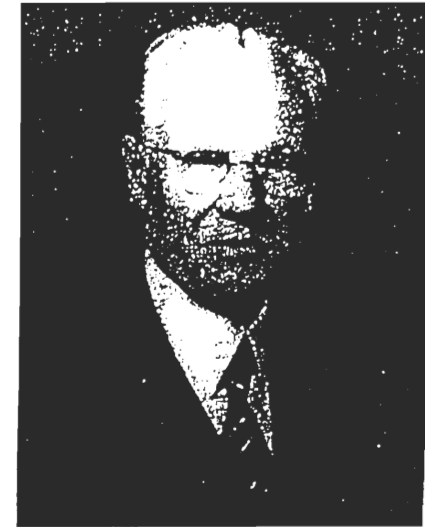
On October 19, 1961, at the age of eighty-seven, the "man of steel" died of a heart attack. His museum, however, lives on as an active memorial to one man's desire to record and praise Humankind's artistic and creative history. Today, more than 25 years after his death, Higgins' spirit continues to fill the Great Hall. The ranks of armor stand resplendent, representing the last of the pre-World War II, privately formed American collections to remain in its original home. More than 15,000 visitors annually marvel at the trophies of one man's efforts, a dream made real for the education and pleasure of all and with his belief that "If we can strike a spark and interest visitors, we are rewarded."

Condensed from a speech by Walter J. Karcheski, Jr., Executive Director and Chairman of the Board of Trustees, John Woodman Higgins Armory Museum.

JOHN WOODMAN HIGGINS ARMORY MUSEUM
1000 STATE STREET, WORCESTER, MASSACHUSETTS 01609-0001

"THE MAN OF STEEL"

JOHN WOODMAN HIGGINS
& THE EARLY YEARS
OF HIS MUSEUM



"Every industry should establish its own technical museum for the inspiration of others in industry, the study of its clients, and the general education of the public, and they should not only cover history, but present products and possibilities for the future."

JOHN WOODMAN HIGGINS



Higgins as a young man in the 1890s

YOUNG JOHN HIGGINS

John Woodman Higgins was born on West Street in Worcester, Massachusetts on September 1, 1874. The younger son of Milton Prince and Katharine Elizabeth (Chapin) Higgins, John was named for his father's professor at the Chandler Scientific School of Dartmouth College. Milton Higgins was affiliated with Worcester Polytechnic Institute, a founder and president of Norton Company, as well as the father of the modern trade school movement in the U.S.

Except for one year in Atlanta, Higgins was schooled in Worcester. He was poor in spelling and languages, but shared his father's natural talent and interest in mathematics and mechanics. He also possessed a fascination with metalworking and spent many hours observing blacksmiths, farmers and factory workers at work. Like many of his contemporaries, young John was also enchanted by the chivalric tales of knights and knighthood, a common literary theme at that time. These interests manifested themselves in a life-long devotion

A DOCTOR OR MANUFACTURER

Since his youth, Higgins had wanted to be either a doctor or a manufacturer. Therefore, it was not surprising that in 1896 after graduating from Worcester Polytechnic Institute, John joined his father's Plunger Elevator Company. When the firm was sold, the two men purchased the Worcester Ferrule and Manufacturing Company, reorganizing it in 1905 as the Worcester Pressed Steel Company. When his father died in 1912, Higgins became President and Treasurer, positions he held until 1950 when his oldest son took over.



Design for the Predator trademark. The Knight in the Armory's coat was copied after this.

A CELLAR PAINTED SILVER

On January 17, 1906, after what he described as a "very, very long" courtship, Higgins married Clara Louise Carter of St. Louis. They soon visited Europe, and while in Venice, Higgins purchased his earliest documentable armor: a modern reproduction. By 1914, the Higginses, now a family with a son, Carter (soon followed by another son, Bradley, and a daughter, Mary Louise) built a new house on William Street, near Elm Park. Constructed at a cost of more than \$80,000, it was filled with many state-of-the-art innovations, including coat dryers in closets, ice machines, secret panels, shoe polishers and automated window shutters. Higgins' love for metal even reached into the bowels of his home, the William Street

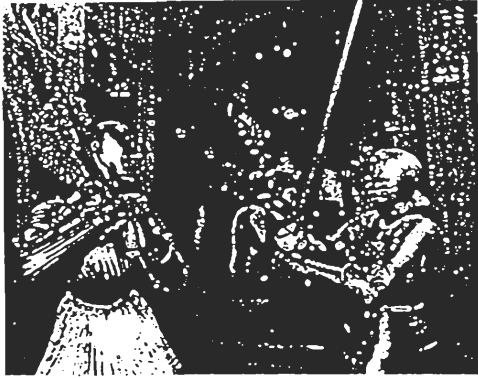


Three-quarter armor, probably for the 2nd Earl of Pembroke, North Italian, circa 1560-70.

A DREAM IS FORGED

It was on one of Higgins' many trips to Europe that he resolved to build a first-class collection of armor. In 1927, he recorded that a June 1926 sale at Christie's in London, presumably the Princes Radziwill collection, set him on his course. He lamented that while he had "one or two copies of suits..." he was still searching for a "real good genuine suit, an interesting genuine museum piece." He achieved this goal in 1928 when he purchased a group of armors from Sir Joseph Duveen, the famous art connoisseur and dealer. This was Higgins' first truly significant acquisition and was followed by several equally important purchases during the next decade.

At this time, Higgins realized that he needed a facility in which to house his growing collection, and he began to conceptualize a museum that would serve as a temple to the art of metalworking, with armor as the focus. He envisioned a commercial museum where exhibits of all qualities would be available for



*A view of the Great Hall from the Foot Soldier's
Perspective. Photo courtesy of the Hon. Donald and George Marzot.*

We were ankle-deep in water January 2, but the new year also found us standing on high financial ground—solidly in the black. The floodwaters were dismaying but not as impressive as those great torrents of achievement that are chronicled below in the Director's report. As a former Trustee remarked at a pre-flood reception: "You are fortunate. This is a great time to be President." I readily conceded the point, and still believe it to be true despite the pestilence of rehabilitation that has been felt most acutely by the staff.

This is not to commend a wild or thoughtless enthusiasm for the Museum's future, however. Our fine collection of hairshins, which Trustees donned for board meetings when the institution's prospects were less uniformly brilliant, has been deaccessioned. Challenges remain, how-

ever. Our endowment is plainly inadequate, generating income sufficient only to cover occupancy costs, and this fact reflects a deeper concern. Along with other cultural institutions, we are having to work harder than ever to build a sizable and an active Board that can help the Museum to capitalize on its potential. This is why the Director and I hosted some ten "Friday lunches" at the Museum last Fall attempting to strengthen relationships with Trustees, Incorporators, supporters, and prospective friends. In the not-for-profit world, an institution's competitive advantage derives from the depth and range of such relationships, and so my priority for 1998 will be to continue this work which is really a joy.

As such effort prospers, the Museum will take on the character of the Damascus steel that many of us learned about a few years ago during the exhibit, *Arms of the East: Jeweled Weapons of Status and Rank*. The watered crucible steel produced in Persia and India from the Middle Ages onwards, combines a super-high carbon content that qualifies it as wrought iron with the elasticity and resilience that permits it to take a very fine edge. Higgins already has a super-high content of striking facilities, incomparable collections and exhibitions, and stimulating programs for all ages. It is a strong and splendid piece of steel, but all of that strength will not be enough to ensure success during this time of economic and social upheaval. The Museum will require resilience and flexibility as well as strength if it is to keep its edges sharp in an increasingly competitive cultural environment. Much of that edge will come from our exemplary professional leadership, but an important measure will need to be supplied by a nimble Board of Trustees and a persevering band of Incorporators and friends. I pledge my best efforts towards helping to build such a Board and band, knowing this is one project that we never will be able to mark "finished".

Robert S. Bacheider

The Museum experienced a watershed year in 1997. We sustained the extraordinary momentum of growth that led to an operational surplus for the second consecutive year. We also can report strong growth in our endowment: draw-down was 3.1%. Most museums set a 5% target rate, which means that our performance was 32% better than the standard draw-down rate recommended for most not-for-profit organizations. Our corporate sponsorship and grants continued to grow. We were amongst three other Massachusetts cultural institutions to receive the maximum Institute of Museum and Library Services grant for 1997 through 1999. This year once again The Stratvest Group is generously sponsoring this publication and the costs associated with the annual meeting.

Attendance, membership and programs combined grew by 26%, while store sales improved by 4%. The hard work of the education department in developing exciting programs and successfully marketing them and the imaginative curatorial projects attracted the attention of new audiences. The gallery on the first floor was renamed the Mary Louise Wilding-White Orientation Gallery at a gala celebrating John Woodman Higgins' daughter's lifetime commitment to the Museum. The public relations department was hard at work at keeping the Museum's name in high visibility: we were on the cover of the AAM's *Museum News* and innumerable radio, newspaper, and TV spots during the year.

Continued on page 70

Higgins Armory Museum 100 Barber Ave. Worcester, MA 01606 (508)853-6015

Higgins Program Evaluation

We hope that your group enjoyed its visit to the museum. Please help insure quality programs by filling out this evaluation form and returning it to the Admissions Desk before you leave, or by mailing it back to us. Thank you.

Name: _____
School: _____

Teacher Chaperone
Grade: _____ Date: _____

Auditorium Program – Please rate this presentation: Excellent Good Fair Poor

Comments: _____

Tour – Please rate your tour: Excellent Good Fair Poor

Comments: _____

Workshop/ Role Playing – Please rate: Excellent Good Fair Poor

Comments: _____

Was the material and presentation suitable for the age/grade level? Yes No

Comments: _____

What additional material would you like to have included?

Comments: _____

How did you learn about the Museum's school program? Brochure Colleague

Other (Please comment) _____

Comments: _____

