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PWD-1022-51

**“The Knight is Young” at the HM Tower of London**

An Interactive Qualifying Project Report  
Submitted to the Faculty  
Of the  
WORCESTER POLYTECHNIC INSTITUTE  
In partial fulfillment of the requirements for the  
Degree of Bachelor of Science

Sponsoring Agency: Royal Armouries

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Date: February 27, 2004

## **Abstract**

This project consisted of an evaluation of “The Knight is Young”, an exhibition by the Royal Armouries at the Tower of London. The organisation wished to know how well the exhibit achieved its goals of being enjoyable and informative for all visitors, as well as people’s opinions about the subject matter (children’s arms and armour). This was accomplished through the use of surveys, interviews and observation of visitors. The results showed that the exhibit achieved its goals well.

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## **Executive Summary**

Historical museums exist to preserve and display artefacts of a culture in the past, in order that people will remember their history and be interested in learning more. Exhibit designers must take great care in choosing what to display and how to display it, in order to create interesting and informative exhibitions. However, museums do not always know how well they are conveying their information to the public. The Royal Armouries of Great Britain requested us to determine how well the “Knight is Young” exhibit, an exhibition of children’s arms and armour throughout history, has accomplished its goals of being interesting and informative for visitors, especially children between the ages of 9 and 12 years as well as their families. The results of our assessment could help the organisation design future exhibits in a way that will be as effective as possible. This would in turn help the Royal Armouries to better fulfill its mission of bringing arms and armour to the greater public.

The goal of our research was to perform a thorough evaluation of the exhibit and to analyse the possible reasons for effective as well as less effective aspects of the exhibit. To accomplish this, we gathered data on patrons’ enjoyment of the exhibit and how much they learned. We found out from our data that the vast majority of visitors enjoyed “The Knight is Young” and that most age groups had similar levels of enjoyment. We found significant gender differences within some age groups in attitudes toward the exhibit’s subject matter. In addition, we found that the exhibit was effective in teaching visitors about the subject matter, and that people learned well from both the interactive and didactic portions. The patterns we observed in visitors’ reactions to the “Knight is Young” exhibit, as well as the assessment method we developed for this exhibit, may prove useful as a tool for analysing other displays in the future.

Once a museum has a clear method for evaluating an exhibit, more exhibitions may be examined. This would increase the amount of available information on how best to design museum displays and lead to better exhibits in general. Finally, a track record of successful exhibitions may make it easier for the Royal Armouries to obtain corporate sponsorship for future displays. Companies will be more willing to sponsor a project that they believe stands a good chance of attracting large crowds.

In order to determine how much visitors enjoyed the “Knight is Young” exhibit, we used a combination of methods including direct observation, surveys and interviews. Direct observation was useful in seeing which parts of the exhibit people seem to enjoy most and also allowed us to see how much time people spent in different areas. In addition, the use of direct observation made it possible for us to gather large quantities of data from many patrons, without inconveniencing them in any way. We conducted surveys of visitors within the museum to get a larger volume of information about people’s opinions of the exhibit and its content. We used two general forms of the survey—one for older children and adults, as well as a simpler version for younger children and this was in order to obtain information from young children who could not understand the survey. This allowed us to obtain more information from children than we would have been able to from surveys alone, because in interviews we were able to ask questions of children too young to know how to read and write.

To find out how much visitors learned from the exhibit, we also made use of surveys and interviews. We included two types of questions in our survey to assess learning. One survey tested whether visitors learned a specific fact from the exhibit, and the other was simply an open-ended question asking for one thing the person learned from the exhibit. We found that the exhibit was effective in teaching visitors a bit about

children's arms and armour, as well as the life of children in general during medieval times. The responses to the open-ended question varied little between age and gender groups, while there were some differences between groups in the percentage of correct answers to the specific questions. These differences may reflect differing levels of interest between the groups.

One research question that we added to our project after we had started was to find out visitors' opinion of Playmobil's sponsorship of "The Knight is Young". This was done by having an open-ended question on our regular survey, as well as developing a short questionnaire specifically dealing with the sponsorship. The results of the survey question, as well as the sponsorship questionnaire, showed that the majority of visitors had a positive opinion of Playmobil's sponsorship. In addition, the sponsorship survey showed that more than half of the visitors were unaware that Playmobil was the sponsor of the exhibit.

From our research, we have been able to make some specific recommendations for making future exhibits as interesting and educational as possible. These include using as many interactive displays as possible to maximise enjoyment, as well as using both interactive and didactic styles to present information and making sure important displays are in good locations. In addition, we believe that future exhibits should have a more even balance of information dealing with the life of boys and girls in history. This may help girls be more interested in the subject matter of the exhibits. Finally, we recommend that visitors be made aware of the fact that a corporate sponsorship is what made an exhibit possible.

It is our hope that our research on the "Knight is Young" exhibit will help the Royal Armouries make their future exhibits as enjoyable and informative as possible.

Such effective exhibits will then allow the Armouries to better accomplish their mission of educating the public about arms and armour.



## **1.0 Introduction**

Robert (1997) argues that museums “serve as a depository devoted to the preservation and conservation of objects of particular value” (p. 24). Items in a historical museum, such as the Tower of London, retain their value through historical significance. These items are a piece of a culture that no longer exists as it once did, but each item is a reminder of that past. The museum displays these items in exhibits so people will remember their history, retain their heritage, and desire to learn more. Society should always be aware of its past in order to appreciate where it is today. However, museums do not always know if the information that they are trying to get across is absorbed by the patrons; or if the history is becoming misrepresented or lost to the public. *Re:source* (2003) has developed a guide for the creation of displays, which proves useful in improving patrons’ interest and knowledge about their past culture. The guide is based on *Inspiring Learning for All*, which can be found on the internet at [www.resource.gov.uk](http://www.resource.gov.uk). The effectiveness of the guide for improving displays to be more interesting and informative needs to be validated.

Because it is so important for a historical museum to convey its information to the public, the Royal Armouries at the Tower of London Museum wished to know how effectively the “Knight is Young”, an exhibit on children’s arms and armour, has done this over the past year. They also wanted to make sure that their target audience, children and their parents, are enjoying themselves while attending the exhibit. This was not, however, their only concern; they also wished to know how much the families were learning from the exhibit. This is important because the museum has presented information in the exhibit that they believe is interesting and useful to know.

There are many factors that go into a successful museum exhibit. Some of these have to do with museums and their obligation to convey factual information. There are others that have to deal with the enjoyment and education of people who visit the museum. Research has shown that the most important aspects of creating successful exhibits include how a museum displays exhibits, makes them interesting, attracts a variety of people to the museum, and conveys an atmosphere that encourages learning as a pleasurable experience. It has been proven that these aspects can be manipulated so that a visitor can have the maximum museum experience. Of course, this is not as easy as it sounds. In order to manipulate these categories effectively, museums must first take into account the audience that is visiting their museum. Other research shows that a museum must try to reflect what a community sees as important and not what the museum itself sees as important. While this seems fairly obvious, it is quite possible that the exact opposite happens in museums.

Although the Royal Armouries had evaluated some of their previous exhibits, they had not examined “The Knight is Young”. They knew that the majority of people visiting the Tower of London had gone to see this display, but they knew little about the patrons’ opinions of the exhibit. The Armouries also did not know which age groups found the exhibit most enjoyable and informative.

The major need of our sponsor in this project was for us to assess the effectiveness of the exhibit in being not only educational, but also interesting for visitors of all ages. Our goal in doing this research was to perform a thorough evaluation of the exhibit and to analyse the possible reasons for effective as well as less effective aspects of the exhibit. One of the most significant benefits to the Royal Armouries from this research is that our assessment of the “Knight is Young” exhibit has told them how well

the exhibit has entertained and educated its target audience. In addition, by proposing explanations for our findings, we have been able to suggest ways to make future exhibits as effective as possible. If the exhibits are interesting and informative for visitors of all ages, the organisation can better achieve its goals of educating people about arms and armour as well as cultivating an interest in the subject among the public, because more visitors will be attracted. Another benefit is that the assessment method we developed for this exhibit may prove useful as a tool for analysing other displays in the future. Once a museum has a clear method for evaluating an exhibit, more exhibitions may be examined. This would increase the amount of available information on how best to design museum displays and tailor them to target audiences. Finally, a track record of successful exhibitions may make it easier for the Royal Armouries to obtain corporate sponsorship for future displays. Companies will be more willing to sponsor a project that they believe stands a good chance of being successful.

## **2.0 Background**

In this chapter, we describe the tools necessary to complete our project while working with the Royal Armouries at the Tower of London. Through our research, we were able to compare and contrast ideas and theories about our topic, the effectiveness of an exhibit on children's arms and armour called "The Knight is Young". This helped us develop an extensive knowledge base concerning our topic. It also allowed our group to spend the necessary time needed to look into and solve our problem while in London.

The components that make up this chapter give insight on the project's location, the exhibit, museums, and people's learning styles. The first two sections of this chapter discuss the location and give a brief history of the Tower of London and the Royal Armouries. In section three, the various forms of museum sponsorship are explained. The history and purpose behind "The Knight is Young" is given in the fourth section. Museum exhibits are discussed in the fifth section. This involves the explanation of how museums exhibits are designed as well as giving examples of other exhibits allowing an opportunity to compare and contrast. The sixth section gives insight into the different types of learning styles that people have and ways to cater to these styles. The last topic is about evaluation and is in the seventh section. Here, methods of evaluating museum exhibits are explained. The methods explained give various ways to determine the effectiveness of a museum exhibit. All of the sections in this chapter have helped to provide the knowledge base necessary to complete the evaluation of "The Knight is Young" exhibit at the Tower of London.

## **2.1: Tower of London**

The Tower of London is an 18 acre complex made up of 22 towers and buildings located in the borough of Tower Hamlets on the Thames River. This tower is England's most celebrated military monument, and for good reason, because it is also considered an icon of power (Insight Guides, 2002). The Tower of London is also deeply rooted in the world's history. It is the famous location where numerous traitors were either beheaded or imprisoned. Some of the famous beheadings that took place were two of King Henry VIII's wives, Anne Boleyn in 1536 and Catherine Howard in 1542, along with one of the greatest adventurers, Sir Walter Raleigh in 1618. A couple of other famous people were also imprisoned at this location during the tower's extensive history. William Penn was imprisoned there in 1669 and then became the founder of the state of Pennsylvania. Another famous imprisonment was in 1941 when Rudolph Hess, Germany's Deputy Fuhrer, was held in the tower. The Tower of London was not just a place for executions and imprisonment though. Over the years, it has also served as an arsenal, a palace, a royal mint and even as a zoo. Currently, the tower is a museum and holds various collections of English artefacts.

The Tower of London is a popular destination for many tourists. Two and a half million visitors a year take a trip to the towers (Insight Guides, 2002). This many people visit the Tower of London each year because of the other attractions at this site. The Martin Tower, which was originally built to house approximately 1,000 soldiers, is currently the location of the Royal Family's crown jewels. On display are dozens of crowns, swords and other rarities. This particular location draws the largest crowds. Another frequently visited tower is the White Tower. This tower is the oldest and was built under the reign of William the Conqueror in 1078 making it the oldest part of the

complex. Currently, the Royal Armouries are located here, and this is also the location where “The Knight is Young” is being exhibited.

## **2.2: Royal Armouries**

The Royal Armouries are in charge of collecting various arms and armour. They have suits of armour, shields, guns, mortars and cannons as some of the items in their collections (Royal Amouries, 2003). The armouries are also located in three different areas. One of them is the Royal Armouries Museum in Leeds. This museum was opened in 1996. Currently, it is the home of the national collection of arms and armour. Another location is the Royal Armouries at Fort Nelson in Portsmouth. It was originally built as a fort in 1860 and helped guard against French invasions. Fort Nelson is the location where a majority of the gun collections are housed. The third location is the Tower of London. The collections of royal arms and armour are displayed there in the White Tower. This armoury, just like many other armouries and museums, has a mission statement that it actively follows (Clifford, 2003). The Royal Armouries’ mission is to bring arms and armour to a wider range of the public and to make the studies of arms and armour more accessible to all. This is evident in “The Knight is Young” because this was one of the main factors in designing the exhibit. This particular exhibit’s topic is able to reach a wide audience because children find armour fascinating and adults are able to relate to the children’s fascination as well as theirs from when they were young.

## **2.3: Museum Exhibit Sponsorship**

Corporations are one source of funding for museum exhibits. There are many small and large corporations that donate money on a yearly basis to museums. A lot of these corporations vary in the ways that they donate. Some are open to a wide range of areas and others have a smaller and more specific set of areas for funding. These factors

depend on the particular corporations and what they feel is important. Some of their limitations can be due to the subject of the exhibit and its location (Carpenter and Moore, 2003). The reason behind this is that companies will not want to support an exhibit that does not reach their target audience. The museum and the corporation are both rewarded in their partnership. The museum gets money to host an exhibit and the corporation is able to assist the museum and the public while receiving some advertisement and recognition from the public for having good will.

### **2.3.1: Corporate Sponsorship**

Playmobil is one of the leading toy manufacturers in Europe and is also the sponsor for “The Knight is Young” exhibit at the Royal Armouries (Clifford, 2003). The benefit for Playmobil sponsoring “The Knight is Young” is that they are able to get a lot of exposure due to the public’s knowledge that they are linked to the exhibit. The most beneficial part of being a sponsor is that they were allowed a space in the exhibit for the museum’s patrons to use their toys and play with their games. This allows the patrons to actually get their hands on Playmobil’s products and also gives Playmobil an opportunity to pass out catalogues which normally are only found in toy stores. They have been pleased with the positive feedback so far and are doing more sponsorship because of it.

At the entrance to “The Knight is Young”, there is a room visitors must go through to reach the exhibit area itself (a floor plan of the exhibit is included in Appendix B). This room contains a children’s play area with Playmobil toys, as well as three glass cases with elaborate scenes built using Playmobil toys. The toys in the play area and in one of the scenes are related to castles, and this fits in well with the theme in the Tower. There are cards available near the cases for a competition, in which visitors try to answer questions about the scenes for a chance to win 25 pounds worth of Playmobil products.

Free catalogues are also available in this area for people to take home. The advantages for Playmobil here are that everyone going to see “The Knight Is Young” will see their advertisement, people have an opportunity to try Playmobil products, and, with the competition, an incentive is provided for visitors to look more closely at the products.

### **2.3.2: Other types of sponsorship**

Another source of funding is through public grants and also awards from various foundations. These types of sponsorship assist in the funding of research along with the development of museums, archives, and libraries (The Council for Museums, Archives, and Libraries, 2003). A grant or an award can be obtained through an application process that is different for each grant or award. There are similarities in the process though. All of them involve filling out an application that asks for the museum’s goals, reason for the grant or award, and the museum’s need for the funding. After the application is submitted, it is reviewed by the issuer of the grant or award and a deserving institution is given some funding. The amount of funding that an institution can receive depends on the particular grant or award because their monetary values vary.

### **2.4: “The Knight is Young”**

“The Knight is Young” is an exhibit for families that gives them a chance to view and learn about various arms and armour from England that were used by children in earlier centuries (Clifford and Watts, 2000). This exhibit shows how society’s reflections on childhood have changed over the years. In earlier times, children had their own arms and armour and practiced with them regularly. This was not unusual and in fact it was a part of leaving childhood and becoming a young adult. Currently, the only weapons that children have access to are toy guns and swords. If parents were to give their child a real



weapon today, others would disapprove of this action. This example shows how society's views have changed in the past couple of hundred years relating to a specific topic.

The main goal of this exhibit is to educate a wider audience about how children grew up in the past. The exhibit is also set up to get people thinking about how childhood once was (Clifford, 2003). Another goal was to overcome backlash from the idea of children using lethal weapons. This particular information that the museum wants to make available will be done in various ways. They wanted all of the items that were to be displayed in showcases at the height of an average child in order to encourage them to learn more because they would be more comfortable. The Royal Armouries not only wanted an exhibit of arms and armour, they also wanted to use paintings and films that depicted children wearing and using various forms of arms and armour. A combination of these elements was felt to be the most effective way to distribute the information and keep the exhibit interesting for all of the patrons.

“The Knight is Young” came about by the need for an exhibit that would involve a large portion of the surrounding community. The topic of children's arms and armour was chosen because it could accomplish this, and the Royal Armouries have a substantial amount of European and Oriental armour along with various arms (Clifford and Watts, 2000). Since the organisation already had these items in its own collection, it reduced the amount of time and money needed to set the exhibit up. Not all of the items to be displayed were owned by the Royal Armouries. They needed to get some items on loan from other museums. Some of these loans came from other museums in England, and two loans came from museums in Vienna, Austria, and Chartres, France. Another thing that made this particular exhibit appealing was that the Armouries felt that the possibilities were high for getting a corporate sponsor for the exhibit.

The “Knight is Young” exhibit is located on the top floor of the White Tower. Lighting is subdued throughout the exhibit area, and somewhat brighter in the Playmobil room at the entrance. The displays are predominantly case displays (discussed in section 2.5.2.1.1), with labels placed low where children can see them. The labels describe the item being displayed and how it was used. In addition, throughout the exhibit, there are posters describing the lives of past members of the royal family, as well as a few dealing with life in general at that time in history. These posters are hung at a height that suggests they are geared to adults and older children, and contain a large amount of informative text along with the pictures. There is also an interactive section consisting of seven questions with answers under flip-up panels on the wall. These questions deal with childhood in the past, as it relates to the use of arms and armour.

The Royal Armouries feel that “The Knight is Young” has been successful (Clifford, 2003). This is because while this exhibit is not a blockbuster exhibit and has had very little publicity, it still has been able to draw people in. The organisation feels very positive about the exhibit because of this. Another successful part of this exhibit is that it has influenced how future exhibits will be labelled, which is an important part of the museum exhibit design process.

## **2.5: Museums**

In this section of our background chapter, we will discuss museums, museum education and the relation of museums to society. The old way of describing a museum was to compare it to a temple. Within this temple sacred artefacts and memories are kept for all to observe and appreciate. Karp, Kreamer and Lavine (1991, pp. 3-5) believe one of the new ways of looking at a museum is to see it as a forum. In this context a forum is defined as a place for discussion, interaction and learning, not just a depository for sacred

artefacts. There is nothing wrong with a temple metaphor for museums, but there is a question about whether it is a more effective and valuable to the public. As a temple, a museum is a place where cherished items are held for preservation. The forum can encompass such things as relating museums and society, maximizing learning capabilities from museums, and creating exhibits for the pleasure of everyone. In this section we will focus more on the museum as a forum for which we can optimise a visitor's experience.

### **2.5.1: Museums and Societies**

There are many issues that must be taken into consideration when representing a society and its culture. Karp and Lavine (1992, pp. 1-3) believe some of these issues include being able to fairly portray a whole population, being able to connect with all subdivisions of the present society and being able to present information in exhibits where cultural differences are understood. Another consideration the museum has to deal with is how to relate its exhibits to the people in order for them to come away with a sense of culture. This is done in different ways, including the choice of what material to display, how to present it and how to make it relevant to present day society.

Another view on this topic, however, is the view of a curator in a museum. Professor Jeffrey Forgeng of WPI and the Higgins Armoury in Worcester, MA (personal communication, 24 November 2003) did not even mention these design techniques that took societal issues into consideration. In the eyes of this curator, the importance is in presenting as much factual information as possible, with little concern about what people think of it. This is the fine line that museums have to walk because on the one hand factual information is the reason they are there, but if museums want the public to learn, they may need to exclude some factual information to accommodate different learning styles and personal preferences. Sue Sunbury of Boston's Museum of Science (personal

communication, 3 December 2003) also warns that curators tend to only want to teach the factual information without regard for how it may be received.

One thing that museums must be extremely careful about is the fact that exhibits tend to reflect the views of their creators. This should be an obvious statement, but many times the views of the creators are not the views of the visitors. Professor Forgeng, for example, said “if I build it, they will come” (personal communication, 24 November 2003). This exemplifies how an exhibit curator can impose his own views on a subject. Karp and Lavine (1992, pp. 12-14) state that one way to correct for this problem requires an outside evaluation independent of the museum itself. In this evaluation, the views of the society must be compared against the views of the visitors to the museum. Museums must think of societies as an audience. It is the job of the museum to provide a learning and entertaining experience. Karp, Kreamer and Lavine (1991, pp. 182-184) believe that museums and audiences should cooperate in achieving mutual understanding of important ideas. This does not necessarily mean agreeing, but coming to a crossroads in which both can be satisfied.

Karp, Kreamer and Lavine (1991) say people “interpret museum exhibits through their prior experiences and through the culturally learned beliefs, values, and perceptual skills that they gain through membership to multiple communities” (p. 3). Karp, Kreamer and Lavine (1991, pp. 191-194) also believe that it is through an exhibit it is possible to enlighten others to new cultures. One way of incorporating cultures into an exhibit is explained by Michael Baxandall, in an excerpt from Karp, Kreamer, and Lavine (1991):

Sufficient interpretation lies in the selection of the fact. This can be made even more wholesome by incorporating a concept, indeed a word, from the culture that produced the object. The systematic

incompatibility of another culture's concept with one's own culture not only makes the viewer work, but reminds him of cultural difference. (p. 191)

This means there must be an emphasis on the communication of ideas in order to produce a better experience for all. The experience is made better even though a person is limited to interpreting exhibits due to prior experiences. When presented in an effective manner, the exhibit has the ability to alter a person's view in the future. Karp, Kreamer and Lavine (1991, p. 184) believe that this communication will allow people of all societies and cultures to appreciate the material in an exhibit.

### **2.5.2: Museum display**

This section presents the styles of displaying items in an exhibit, and the presentations of displays. There are displays that have curators explaining the items in the exhibit display cases. There are displays that are purely self-guided that allow the patrons to go at their own pace, and there are displays that are hands on that allow patrons to be a part of the exhibit. Each style of exhibit display allows for a unique way to learn the material. People have different learning styles, meaning each individual may learn more easily through different means such as listening or seeing. This will be further discussed in Section 6 on learning preferences.

#### **2.5.2.1 Display styles**

In this section, different display styles and presentation styles will be discussed. Descriptions of the ability that display and presentation styles have to obtain interest and conveying information to certain target audiences are presented in this section. Also in this section, certain focus audiences are discussed as to their ability to learn or not learn through these styles of display and presentation.

### **2.5.2.1.1 Case displays**

One display style is to group items of an exhibit in cases that contain items related to each other. Patrons are only allowed to view the items and read a small label that briefly explains items in the case. A full explanation cannot be given because the display would be filled with text, and would take away from the items in the display, as explained by B. Clifford (phone communication, November 19, 2003). This style of display has different methods of presentation; two of these presentation styles will be commented on.

#### **2.5.2.1.1.1 Guided tour**

A guided tour is commonly used to help present exhibits with case displays. A curator will guide a tour group through an exhibit and explain each item in the display, describing what it was made of and what it was used for. This style of display is very informative, as the curator is knowledgeable about the topic and describes the items in detail and can answer the patron's questions. However, if the curator cannot grab the interest of his or her visitors, then the detailed information the curator gives will not be absorbed by the patrons. Groups that tour with a curator have to be open to a lecture format in order to stimulate their interest in the material and cause them to want to learn more. For the Tower of London exhibit, the target group includes children and their parents. Children have less patience than their parents and may not be fully receptive to this lecture format.

This presentation style is also influenced by the curator's interest in the subject. If the curator feels that something is not relevant to the subject, he or she most likely will not go over it (New Statesman & Society p 52(2)). This might isolate certain visitors by making them feel that their interest in the subject is not important, thus discouraging the patron from learning more. Children have interests that differ from those of an adult. The

parents may find the material interesting, but this will be interrupted by the children's complaints of being bored. If curators can understand that children have different interests and are not as receptive to a lecture format, then they might be able to gain the interest of their younger audience (Resource, 2003). This display style is effective for visitors who learn best through listening and visual connection.

#### **2.5.2.1.1.2 Walk through**

Another method of presentation of these cases is a walk through style that allows the patrons to view the exhibit at their own pace. This allows the visitors to view the items and materials that interest them the most, stimulating their interest in the exhibit as a whole. An example of items found in this display style was observed by a child named Michael K. Kearney (1996) at The Children's Museum of Indianapolis,

there was a wall-size sculpture with water running through its various parts that immediately attracted my attention. I couldn't stop looking at it, (p. 32).

This is very good for creating a desire on the part of the patrons to learn more; however, the information that would have been given by a curator is often not present. There may be signs that give a description, but they still lack the detail that a curator would have given. This lack of information that is clearly given may play into the effectiveness of the exhibit. The display items might be described if one takes a closer look, which most likely will happen if one is interested in the material.

“-I walked up to it and suddenly realized that it wasn't just a sculpture; it was actually a giant water clock. Minutes, seconds, and hours were measured off in this clock as the water flowed into its various parts. You read the time by looking at the flood-level indicators, something like reading a measuring cup. Cool” (Kearney, 1996, p. 32).

Self-discovery reaffirms visitors' interest in the material, making them want to learn more about the topic of the exhibit. This display setup will cause the visitor to ask

questions about the topic and gain an interest in the material, but some of the answers are not as accessible as in an exhibit with a curator. This exhibit is for patrons who have an inquisitive nature and learn through experience, visualization, and touch.

#### **2.5.2.1.2 Interactive movie displays**

A display style that shares advantages with both the guided and walk-through exhibits is an interactive movie. These types of exhibits help to provoke an interest in the subject by involving the patrons, as well as trying to give a detailed explanation of the material in the exhibit. This setup up allows the patrons to take an active part in the path that is taken through the movie. An example of this was described by Joe Szadkowski (2001) about the Immersion Cinema's Vital Space presentation in 2001.

Up to 120 "high-tech surgeons" [patrons] sit down at touch-screen monitors for each adventure and are quickly immersed in full-color images of the interior of the human body, learning in microscopic detail about various systems such as circulatory, respiratory and neuroendocrine, (p 4).

The patrons or 'surgeons' make choices about what action to take, and then the movie goes into detail about the effects that result from the action selected. New actions need to be chosen until the end of the movie experience. There are over 100 different scenarios, which all help to explain the circulatory, respiratory and neuroendocrine systems. The cost of setting up a complex exhibit like this one, and the space needed to set it up, makes it difficult for most museums to incorporate this style of display in their museum. Exhibit displays such as this help people who learn with visual and active participation to maintain interest.

#### **2.5.2.1.3 Hands on displays**

There are exhibit displays that are hands on, which allow patrons to feel connected to the past through role playing. The patrons experience the theme of the



display and develop a connection to the exhibit because they have, in some sense, taken part in the material. An example of this type of display was at the Children's Museum of Indianapolis and described by Michael K. Kearney (1996),

We got to be archaeologists for the day. We were given tools like shovels and brushes. Our job was to search for bones, pieces of pottery, and metal artefacts, (p. 33).

The group would learn how to properly excavate an area, and record carefully the artefacts found, the location in which they were found, and the date found. The group learned why they, as archaeologists, had to record this detailed information about items found in the ground. The purpose of the item might be found because this information was collected. This display style permits free interaction, while also allowing supervision by a knowledgeable staff member. The visitors are free to do their part, but an explanation for the things they do is provided by the staff. These explanations, plus firsthand experiences, allow the patrons to get and hold more information about the exhibit on display. This presentation of an exhibit is effective for patrons who learn through hands-on interaction and experience. This is a self discovery quadrant of learning as explained by Sue Sunbury in an interview on 8 December 2003 at the Boston Museum of Science. Patrons with lower attention spans will be stimulated, through an active role that will help to maintain their interest and develop their own conclusions. This display style would suit the intended audience of the exhibit in the HM Tower of London; however, children's armour and weapons would not be a suitable subject for hands-on interactivity. Other artefacts in the exhibit may be more suited for hands on activity; but these pieces have to be able to be manipulated on a daily basis, or else they will be damaged and the ability to present the item is diminished.

### **2.5.3 Museum effectiveness**

Successful museums are constantly changing. The willingness to change is what creates the growth and advancement of a museum. Robert (1997, pp. 40-42) believes that in order for a museum to be effective, it must be able to evolve with society. One way a museum does this is through acknowledgement of the different ways people learn and changing its ways to accommodate these differences. One of the first things a museum can look at is the atmosphere and environment inside the museum and exhibits. For example, Robert (1997, p. 141) states that whether they have a professional atmosphere or a user-friendly, childish atmosphere can obviously dictate what type of people will get the best experience from the museum. According to Wittlin (1970, pp. 69-74) atmosphere and environment can also include categories such as lighting, colour of displays, temperature of exhibit, and the type of personnel a museum has running an exhibit. Another factor that a museum can change is the type of exhibit they are creating. As discussed before this can include hands on, guided, self-guided, and interactive. All of these things are factors that museums should constantly re-evaluate so that they know they are creating an optimal experience for a visitor.

#### **2.5.3.1 Museum atmosphere and environment**

Wittlin (1970, pp. 69-74) believes a museum's atmosphere can do one of two things. It can encourage learning and make a person feel comfortable. It can also create an atmosphere in which a person cannot meet their full learning potential. The atmosphere should, however, attract and cater to the educational needs of a visitor. The mood of the museum may be adjusted by the brightness of the light or the layout of the displays. In addition, the staff can set the mood of the museum; for example, if a curator does not feel that one display is that important to spend the group's time on, but a patron

wants to take a closer look, this could be displeasing to that patron. The type of display will also dictate the major mood of the museum. For example, the many children's museums are more entertaining with their hands-on displays to stimulate excitement about a particular subject.

#### **2.5.3.1.1 Museum Personnel**

The first and foremost characteristic that a visitor notices in a museum is the attitude of the staff. According to Belcher (1991, pp. 27-28), if the personnel of a museum are happy and excited about where they are working, the patrons will be happy and excited as well. This can be illustrated by a common cliché, "You only have one chance to make a first impression." It is important for museum staff to take the subject matter seriously and show genuine interest in the subjects and exhibits that the museum contains. Motivated and dedicated personnel actively show patrons that exhibits are important and meaningful. This should be one of the first things looked at when evaluating the effectiveness of a museum.

#### **2.5.3.1.2 Lighting**

Lighting is probably one of the most important features in a museum that goes unnoticed to the untrained eye. Belcher (1991, pp. 125-128) also states that lighting is important because all museums are a visual experience to some extent. It is the manipulation of light that can emphasize important ideas and captivate audiences. Light can create many different moods when effectively controlled. Such moods as happy, sad, and curious can all be conveyed by the right type of light. Pertaining to individual objects, light can create a magical aura, make objects "sparkle" or "glow", and put more emphasis on one part of an exhibit than another. This can be achieved through different coloured lights, different types of lights, and movement of lights.

Another very useful light trick that can be performed is to mimic daylight.

Through research, Falk (1992, pp. 44-45) has shown that daylight puts people in good moods and can increase the enjoyment of a particular exhibit. The best advantage of being able to simulate daylight is that daylight itself does not have to be used. Daylight carries with it many harmful rays that can damage museum artefacts. This type of lighting can be used both for house lighting and object lighting. House lighting refers to the lights above that guide patrons through a museum and illuminate all pathways. Object lighting puts emphasis on certain display items and illuminates plaques or panels with factual information.

#### **2.5.3.1.3 Colour**

Belcher (1991, pp.128-130) believes that other than light, another important aspect of a museum environment and atmosphere is the colour scheme in and around an exhibit. For the background of an exhibit or display, it was once thought that white was the best colour to use. The belief was that white does not distract a visitor and white does not interfere with colour values of an object. With further research, many museum exhibit designers have come to conclude differently, however. Designers now use a wide range of background colours, all subtle and none that are distracting. Grey is used frequently, because it reduces glare that is found on white backgrounds and makes it easier on the eyes, but still does not jeopardize the integrity of the display colours. Shades of other colours can also be used to emphasize and enhance the colour features of display items. For an example Belcher says “A turquoise object, for example, can be made to appear very blue when displayed against a green background – or very green if displayed against a blue” (1991, p. 129). Colour should be used to either increase the dramatic effect of a display or minimise distractions around a display.

#### **2.5.3.1.4 Music**

Music in an exhibit can also create a good atmosphere for people to learn. Music can set the mood of the time that the exhibit is portraying. This also is more of an entertainment factor in which people can get a taste of the past. Although this is a good atmosphere creator, there are some problems with it. As stated by Ms. Tracy Harrison at the Tower of London (personal communication, 19 November 2003), previous attempts of this have not proven effective. To understand this, one must look at the situation from the museum staff's point of view. They have to hear the same song over and over again every day, and as one can imagine it becomes very repetitive, very quickly. As mentioned above, the first and foremost concern at a museum should be to have an enthused and interested staff. So, if one were to choose between a happy staff or music in the background, the happy staff would prove much more beneficial to visitors. If it were possible to solve this problem by playing different types of music or a variety of songs, then music would be a very effective tool.

#### **2.5.3.1.5 Visitor Comfort**

The last feature of environment and atmosphere is the ways to relax and recharge visitors while in a museum. Relaxing and rejuvenating visitors can cause them to be comfortable and attentive. These two characteristics create a good mood and setting that can optimise a learning experience. Belcher (1991, pp. 110-111) states that there are several techniques that have proven useful in previous studies about this subject. The first thing a museum can do is to have a transition in types of light. As mentioned before, light can be an effective tool in encouraging learning; using this technique a person does not lose interest, and it induces sensory skills. This technique can be executed by having some rooms in an exhibit darker than others, having different coloured lights, and

changing types of light from room to room and display to display. The second technique for keeping visitors interested is to change the colour and texture of walls from room to room. This does not seem like a major change, but research has shown that doing this changes the “feel” of a room. When new sensations are provoked it prevents a person from falling into boredom. Lastly, changing floor types in an exhibit can prove very useful. Again, this provokes different sensations in a person’s mind, which keeps them interested. Also when changing floors from hard to soft or vice versa, it changes the range of muscles used to walk and observe. This action rejuvenates people by stimulating blood flow.

It is easy to see how very simple aspects of a museum can be changed to optimise the enjoyment and education of its visitors. Some of these examples cost more money than others and thus might not be economically feasible. Others, however, do not cost much money at all and can be used to create an effective museum or exhibit. It was our purpose to look at some of these factors at the Tower of London. Through our observations we were able to find common areas that the majority of people liked and common areas that were less liked. After finding these areas, we then analysed possible reasons. Through these analyses we then made several suggestions to make future exhibits more educational and entertaining.

#### **2.5.4 Successful exhibits**

“The exhibit’s success depended first and foremost on its ability to attract and to hold attention” (Robert, 1997, p. 19). To attract and hold the attention of the visitors, the display has to key its presentation style to the targeted audience’s preferred style of learning; whether it is hands on, visually or orally presented. If an exhibit’s target group is formed of scholars with an interest in learning in detail about a certain matter, then a

lecture based display may be suitable. For an exhibit that is to focus on a group of children and their parents, both interests of the child and parents should be met in the display layout for an effective presentation. The attention span of the child should be addressed, as well as the desire of the parents to have the experience be both fun and educational for the child and themselves.

For target groups that contain a large number of scholars, such as a group of students and professors, a display format having an informative curator explaining the display proves effective. This is so because the patrons are familiar with the lecture setup; most of the time the target audience is in classes which are lecture-based. The group will be able to hold their interest and be able to take in the more detailed information compared to an audience of small children.

For a target audience of children and their parents, the key to a successful exhibit is to satisfy the desire of the parents for an educational display, and the children's need for activity. Exhibits that are more hands on enable the children to partake in activities, while they are learning. Take for example the exhibits described by Michael K. Kearney; something had to interest him about certain exhibits, for there were many other exhibits in the museum to write about. Michael K. Kearney was a younger patron at the time of his trip, and he was describing exhibits that were more hands on and self-discovery based (1996, pp. 32-34). These hands on activities allow the children to learn through touch, sight, and experience. For most children touch is an important tool in understanding. Seeing is also easier for most children in understanding most material, as their vocabulary makes it difficult for the instructor and the child to communicate effectively. Self-discovery, through experience, helps to build one's confidence in the material. One is reassured that he or she is on the right track, and becomes less timid in further involving

him- or herself. This will cause the person to have a thirst for more knowledge or experience in the matter.

#### **2.5.4.1 Other museums investigated**

To understand what helped an exhibit to be successful or not to be successful is similar to collecting field data on display ideas. In museums with displays that have done well and displays that have done poorly lie ideas that may be useful. If a certain idea has proven useful, then it may be advisable to implement it in another display with the same type of target groups. Ideas that have proven less successful than expected still can be useful in understanding why they did not have the desired effect. These failed display ideas may have been implemented for the wrong target group, or for the wrong material. The idea may also be ineffective for all display materials and focus groups. If this is so, then it would be a good plan to have the knowledge of this and other poor display design ideas and steer clear of using them in future exhibits.

One interactive display was developed in 1989 at the Chicago Botanic Garden, for the section of classification of the Linnaeus exhibit (Museums p. 16). The designers of the display felt that the concept of classification was familiar for all people and easily grasped, so they wanted the visitors to take a part in the path on how the exhibit was described. This led to “the classification panel” in which the visitor had a choice to classify six photographs of flower heads by colour, by whether the flower faces up or hangs down, or by the number of flowers per plant (Robert, 1997, p. 16). The visitor would make his or her choice and lift a hinge that represents how to classify each flower under the three ways to classify the flowers. The text would continue by asking the visitor to imagine how to group the more than 300,000 types of plants. This small and simple idea for a display caused much controversy. The visitors found greater interest in



the topic, whereas curators and educators felt that this was the beginning of the museum's taking a role as entertainer rather than educator. Curators and educators saw the display as taking the function of the museum from educating the public, to entertaining the public. They

fear[ed] that the metaphor of the blocks would be so inherently engaging that viewers would have neither the desire nor the motivation to make the leap to plant science. In other words, the game of matching like and unlike objects would become its own end; visitors would stop and play and then move on to the next fun thing that would catch their eyes, (Robert, p. 18).

However, due to its draw to the common visitor, the exhibit was able to bring in more people. This in turn would educate more visitors about the subject at hand. The exhibit's designers had an idea that would pull in more visitors, but at the cost of angering the people who felt that the museum was a place of education and not entertainment.

An exhibit display that was studied, during a trip to the Boston Museum of Science, was a display that demonstrated an ability to interest both parents and children in the field of psychology. In the middle of the exhibit sits a table of many different instruments that are used in psychology to determine certain aspects of the subjects operating the instruments. These instruments look more like toys to the children, and the kids are attracted to the table with the instruments. The children begin trying to figure out the instruments and begin playing with them. Around the table, along the walls of the exhibit, are descriptions that talk about what each instrument evaluates, and how the evaluations are measured. The children would be the case study for the parents as they walked around the room reading the descriptions. The parents were able to relate the description in real time activities, and allowed the parents to be interested in the next 'toy' their or other children were working with. The children develop a curiosity in the

interesting toys that they are playing with, and the parents help to explain how the ‘toys’ help psychologists in their work.

This exhibit display in the Boston Museum of Science allows the patrons to take the display at their own pace, well as having a hands-on-experience. Both the children and the parents learn from and enjoy the exhibit. The patrons are used as a part of the exhibit in the sense that the children are objects to observe. The parents are able to relate this to their life due to the involvement of their and other children playing with the ‘toys’ on the table.

## **2.6: Learning styles/preferences**

In order for museum exhibits to be effective in accomplishing their goals, certain characteristics of the target audience need to be considered. These include the different ways patrons may learn, as well as factors relating to the age groups of the patrons. In addition, cultural differences can play a role in visitors’ enjoyment of an exhibit as well as how much they learn from it.

### **2.6.1 Information presentation**

There are several ways information can be presented, and people can have different preferences and strengths in how they prefer to receive it. This means that a museum exhibit should present its material in a manner that considers these diverse preferences, so that all visitors can enjoy it and learn as much as possible. Fleming (1995) identifies four such learning preferences: visual, aural, read/write and kinesthetic, adding that some people have more than one strong preference and may need information presented in more than one of these ways to learn best. The emphasis in his model is on ways people take in information. Barbe and Milone (1981) describe three modalities, which they view more as strengths than preferences: visual, auditory (which is the same

as aural) and kinesthetic. They consider reading to be included in the visual modality and writing to be kinesthetic (Barbe & Milone, 1981, page 378). Examples of ways all these modalities could be incorporated into a museum exhibit include providing plenty of pictures, charts, diagrams and other figures (visual); having a staff member describe each part of the exhibit or providing a tape-recorded narrative (auditory), providing pamphlets and written descriptions of each item and its purpose (read/write), and having interactive, hands-on parts of the exhibit, such as trying on a replica of some armour or acting out a scene (kinesthetic). Visual learners would probably enjoy the “interactive movie” about the human body, described in the previous section. Such an exhibit could also be good for auditory learners, because there would be spoken explanations to go with the pictures. One example of an exhibit that would be good for kinesthetic learners is the “archaeologist for a day” exhibit, also described in the previous section. Based on information from the Royal Armouries staff, as well as our own observations, the “Knight is Young” exhibit appears to mostly make use of the visual and read/write modalities, displaying graphics to help explain parts of the material as well as using the standard printed labels describing each item; there is also a booklet that can be purchased at the Tower of London, that includes a description of the exhibit. If a variety of methods are used to present the material, this will help all visitors learn as much as they can while enjoying themselves.

Other learning style models have components that are relevant for museum design as well. Felder and Silverman (1996) have four dichotomous categories in their model that comprise a person’s learning style; one is that a person can be visual or verbal, with the verbal category encompassing the read/write and aural modalities in the VARK (Visual, Aural, Read/write, Kinesthetic) model developed by Fleming (1995). Therefore,

it would appear that the “Knight is Young” exhibit covers both the visual and verbal ends of the category, although only one component of the verbal style is strongly used (that being reading/writing). The other classifications in this model are sensing vs. intuitive, inductive vs. deductive, active vs. reflective, and sequential vs. global. The sensing style prefers to work with facts, while the intuitive style is more comfortable with concepts and abstract ideas. Inductive refers to a preference of learning something specific and then generalising; deductive learners prefer the opposite approach from general to specific. The active learner learns best through experience (trying something), while the reflective learner prefers to think it through. Finally, sequential learners prefer information presented in a logical order and in small steps; global learners like to see the “big picture” (Felder, 1996). It appears that the “Knight is Young” exhibit is more geared toward the reflective learner, as it does not contain an area where patrons can try on armour, or other actual hands-on experience. There does not seem to be a real bias toward any of the other Felder-Silverman categories, due in part to the fact that patrons are free to go through the exhibit at their own pace and look at what interests them. Although the Felder-Silverman model was designed mainly for science and engineering education (Felder, 1996), it has some relevance for the development of museum exhibits.

### **2.6.2 Age differences**

Bridget Clifford, of the Royal Armouries, told us that the “Knight is Young” exhibit is aimed at families and, especially, children ages 9-12 (personal communication, 11/19/2003). This means there is a wide range of ages in the target audience. Therefore, it is necessary to make sure it is appropriate for children, especially those ages 9 and over, while keeping it interesting for adults as well. Factors that should be taken into account include reading levels, attention span and level of comprehension of each age

group. Because visitors span a large range of ages, there will be a wide range of attention spans—younger children will generally not be able to focus on one thing for very long, but adults will be able to pay attention for much longer. However, Bridget Clifford (personal communication, 11/19/2003), informed us that the exhibit is of the self-guided type, where visitors can view it at their own pace. This means that attention span may not be a major issue. Although the exhibit is mainly aimed at children old enough to know how to read, there may be younger children with them, because the entire family is visiting the museum together. Very young children have not yet learned how to read, so the pictures that help explain parts of the exhibit may be helpful for them as well as for the more visual learners.

Another way to ensure that children who cannot read will benefit from the exhibit may be to have a staff member explaining the items to the children as they walk through the exhibit; this is also helpful for the aural/auditory learners. In addition, children who are just starting to read will not be able to comprehend some of what is printed on the labels describing parts of the exhibit. This problem can be reduced somewhat by not making the wording too complicated, but care must also be taken to avoid “watering down” the content so much that older children and adults will find it boring or condescending. Again, one solution would be to have oral explanations provided and to make use of pictures.

### **2.6.3 Cultural factors**

Although some of the visitors to the Tower of London are English, people from many different cultures visit the museum. This must be taken into consideration to create an enjoyable and educational experience for everyone. One major factor is language—not everyone understands English. For visitors who use other languages, pamphlets,

tape-recorded narratives and other material presented in their native language would be helpful. In addition, the above suggestion of using pictures for younger children may also help people who use other languages to understand the exhibit better. This may be especially helpful if the visitor uses a less common language that may not be used in any of the printed materials or audio recordings provided by the museum.

## **2.7: Evaluation**

An evaluation for a museum assesses many aspects of the museum's effectiveness. As seen by Belcher (1991), "Evaluation is, therefore, a means to an end – the end being exhibitions which function better and, as a result, give greater visitor satisfaction"( p.202). In general, evaluations are used as a tool to give a museum feedback so that it can better itself and be a more useful institution. Evaluation can be broken down into two main components. These components are: what needs to be assessed, and data collection methods. Both of these components are vital to an evaluation and will provide the needed information for an accurate assessment.

### **2.7.1 What needs to be assessed?**

To determine that an exhibit is successfully presented, the level of enjoyment and information that the patrons get from the exhibit needs to be collected. The level of visitor enjoyment determines the probability that the patrons will want to learn more about the subject, and maybe return to the museum. The enjoyment level also determines the likelihood that the patrons felt at ease about the style of the display; and how well it fit their learning preference.

### **2.7.2 Data collection methods**

To assess the "Knight is Young" exhibit there are many data collection methods that can be used. As seen in other IQP reports, such as "Assessing Public Opinion at the

White Tower” (DiCicco, Egan, and Maggee, 1999), the use of surveys and questionnaires can be a very valuable tool. Also, sampling of populations can give many useful quantitative and qualitative results.

As stated by Sue Sunbury (personal communication, 3 December 2003) there are 3 major forms of evaluation for a museum. First there is a front end evaluation. This evaluation occurs before the exhibit is even created. The purpose is to interview or survey people on what they already know about the subject and whether or not they are interested in it. It is important to not seem intrusive when interviewing because people do not want to feel dumb or look dumb in front of their children. Also, children do not always give the best answers, so their credibility is questionable. For our purposes, we were not able to use this type of evaluation.

The second form of evaluation is an interaction evaluation. Also called a formative evaluation by Belcher (1991, pp. 202-203). This evaluation occurs when only certain sections of the exhibit are completed and are in a testing phase. Sunbury said in this stage they try to verbally sell certain items in the exhibit to see if people are interested. Through trial and error they find which parts of the exhibit need to be changed and which can be kept. After this takes place the exhibit is finalised. This means they finally set all the lights, colours, labels and they meet all codes. This was not relevant to our project. Because our exhibit had already been designed, it was impossible to conduct this evaluation in the development stage. In addition, it was not feasible to change any aspects of the exhibit and see the effects of the changes.

The last form of evaluation, which has proved very useful to our project, is called an ant trail evaluation. Also called a summative evaluation by Belcher (1991, pp. 203-207). This evaluation is used to show which sections of an exhibit are most successful.

To do this evaluation it is necessary to determine the total amount of time it takes at each portion of an exhibit to get the full experience. This includes reading all labels on objects and inspecting pictures, models, etc. Once that is accomplished, one must follow a person or group of persons and see how long they stay at the different portions of the exhibit. This is called the holding power of an exhibit. Another sub evaluation that can be performed is counting the number of people that are attracted to portions of an exhibit. This is called the attention power of an exhibit. Lastly, while following people, it is helpful to record, if possible, notes of the discussion and the different reactions people have to the portions of the exhibit--looks of happiness, curiosity, confusion, intrigue, etc. These will help to determine the success of each element in an exhibit.



### **3.0 Methods**

The Royal Armouries organisation previously did not know how effective the “Knight is Young” exhibit had been in terms of being interesting and informative for visitors of all ages. It was our group’s goal to assess the exhibit’s effectiveness and how it can be improved if necessary. We went about this through a series of objectives we set for ourselves. Our group first identified the museum’s goals for this exhibit. This gave us a better understanding of how the museum designed the exhibit and how it is currently being operated. Once we had a grasp of the museum’s goals, we were able to assess the enjoyment of the visitors and find out what they learned while attending “The Knight is Young”. We did this by using direct observation and surveys or interviews of the museum’s visitors.

Once we gained an understanding of what each visitor took away from the exhibit, we were able to determine through our final analysis what age groups had the best experience at “The Knight is Young”. This allowed us an understanding of the target audience and gave us information about the learning styles of this audience. We then compared these findings to the learning styles used in designing the exhibit. Finally, we identified the aspects of the exhibit that are the most successful and the parts that could use improvement. Our group accomplished this objective by combining all of our research and findings, giving us a wide range of knowledge to determine the effectiveness of “The Knight is Young”.

### **3.1: Visitor enjoyment**

In order to assess visitors' enjoyment of the exhibit, we used direct observation, surveys and interviews. These methods are described in detail later in this section. Direct observation was useful for seeing which parts of the exhibit seemed to be enjoyed the most, as well as allowing us to obtain data without inconveniencing visitors in any way. We collected a large volume of data by conducting surveys of patrons, using questionnaires dealing with topics such as which parts of the exhibit they liked best and, in addition, what they thought of the subject matter. Questions dealing with visitors' attitudes toward the exhibit's subject matter are useful because such attitudes are likely to influence their enjoyment of the whole exhibit. In addition, we included a question dealing with visitors' opinions of the Playmobil sponsorship, as well as developing a short questionnaire specifically dealing with corporate sponsorship. Finally, by interviewing young children, we were able to collect data that we would not have been able to collect from our surveys.

To carry out the first part of our direct observation, consisting of 84 ant trails, we acted as if we were patrons viewing the exhibit, and followed certain visitors as they moved through the entire display area. Such participant observation minimised reactivity, due to the fact that the patrons did not know we were conducting research and therefore behaved normally. Because we were observing people in a public place and not asking for anyone's identity, there should be no ethical problems associated with this method. These ant trails were done during weeks 1 and 2, to find the most and least popular parts of the exhibit. We performed more detailed observations in these areas during weeks three through six.

We used convenience sampling (non-probability) to choose whom to observe. This method had to be used for practical reasons; it was not possible to obtain a list of the patrons ahead of time, and the only people being sampled were people who came to the museum. Also, we were only at the Tower of London for seven weeks out of the year; this also precluded probability sampling because the only people we sampled in the entire course of our research were those visiting the Tower of London during that brief time.

In our ant trails, we watched to see how much time the patrons spent at each section of the exhibit, as well as whether they read the labels posted at each item. We then recorded these times, as well as each place the visitor stopped, on a floor plan of the exhibit. Included also in this information was the total time spent in the exhibit as well as the time spent in the Playmobil area. The time spent at each section can be used as one indication of the visitors' interest in and enjoyment of that part of the exhibit. We identified the most and least popular parts of the exhibit and performed more detailed observations of patrons in these areas during weeks three through six. In these observations we looked at not only time spent at a display, but also whether labels were read. By seeing how much the labels were read, we were able to determine how helpful they were to the patrons; if most people read most of the labels, this indicated that they were useful. In addition, we made note, if possible, of any interesting comments made by the patrons during the course of their experience, such as those revealing their opinion of some aspect of the exhibit, or their attitudes toward the use of armour by children. However, we found it quite difficult to hear comments during the course of our observations and this was therefore not as useful as we had originally thought it would be.

Another important research method we used to examine visitors' enjoyment was that of surveys. Surveys are commonly known as a simple questionnaire, but there is much more complexity than that. Our survey questions were carefully selected to facilitate answers about all aspects of visitor enjoyment, and we used a simplified version of the questionnaire for children old enough to read. In order to do this, we conducted a sampling of the patrons who came to the "Knight is Young" exhibit. To gain valid responses to these topics, we used a few different research methods.

We tested our survey questionnaire during the first week of our project, by administering it to 20 visitors to the "Knight is Young" exhibit and seeing if there were any questions that generated poor responses. In addition, we discussed the questionnaire with Tracy Harrison and Bridget Clifford of the education office, to get their suggestions. One suggestion was to omit a "neutral" choice in the questions dealing with people's opinions, due to the possibility that many people would choose this answer to avoid being offensive. Another was to be specific in asking for one way someone would improve the exhibit, or one thing they learned, rather than "a few". We incorporated these suggestions and then made an additional change based on the response rate to our question about what a person would do to improve the exhibit. Because many people left this question blank, we changed it to "what is one thing you did not like about the exhibit". This version generated a higher response rate.

To administer the survey, 1 or 2 of us stood at the exit from the exhibit, asking people to fill out a survey to help us evaluate the exhibit. We found that our sample was limited by whether or not the visitors spoke English, as well as visitors' willingness to stop and fill out the questionnaire. During the first six weeks we administered a total of 716 general questionnaires, including the children's version. Also, during weeks five and

six, we administered the short questionnaire asking for visitors' opinions on corporate sponsorship; we administered a total of 97 sponsorship surveys.

The method of interviewing was involved in this project, in addition to direct observations and surveying. Interviews were used to collect detailed data from some of the younger visitors to the "Knight is Young" exhibit. This technique of data collection allowed respondents (young children) to understand the question better, and to elaborate on their answers compared to a survey.

The method of interviewing used non-probability, convenience sampling. In this project, samples for interviews were non-probability, because all the people being interviewed were in the museum. The most relevant people to poll in order to determine if the exhibit is successful were those who had seen the exhibit. To see the exhibit, the people have to enter the museum. For this project, interviewing was conducted on convenience because the only people being interviewed were random people who walked through the doors of the museum. This was necessary for practical reasons, as it is impossible to know in advance who will be visiting the museum.

Interviews were used to gather more detailed information, from the patrons, about certain aspects of the exhibit. During the first six weeks of our project, we did 40 interviews of young children. These interviews gathered more detail by determining what the patrons thought about the exhibit and its display. To do this, one needs to ask questions that allow the interviewee to explain his or her answers. Examples of our questions include "what is one thing you learned from the exhibit" and "what was your favourite part of the exhibit". These questions allowed the patrons to give details about parts of the exhibit that interested them the most. Using observation alone, one can only see what display case or displayed items most interested patrons—it is not possible to see

why. Many patrons may have interests in the same case or the same items, but for different reasons. Knowing these reasons is useful for determining what is effective in the display, and why that is, which can help to develop a pattern of what works for an effective display. If the items that are most interesting to the patrons are the part the relays the important matter in the exhibit, then it can be inferred that the exhibit is successful.

In the interview, an array of simple questions can be asked. These simple questions are more suitable for collecting data from the younger members of the museum's audience, as it is easier on them. Children may not want to take a survey or scale because they do not want to read all the questions. In order to get more data from children, we asked the children if they would like to answer a few questions about the exhibit. With their parents/guardians permission, we were then able to find out such information as what they liked and did not like in the exhibit. These questions were similar to our open-ended survey questions, but simplified for children.

Patron interviews were conducted at the exit of the exhibit, in the area where we handed out our questionnaires. On busier days, patron interviews were often held to a minimum to avoid blocking the flow of traffic. With slower days, the possibilities of interviewing the patrons became much greater. Patrons were selected by age and gender, attempting to get an equal number of males and females, as well as trying to interview a large number of young children since the survey questionnaire was less useful for them.

### **3.2: Learning**

In order to assess how much visitors learned from the "Knight is Young" exhibit, we used both surveys and interviews. Surveys, as described in the previous section, are useful for collecting large amounts of data in a relatively short amount of time.

Interviews allowed us to obtain information from patrons too young to take the survey, just as in the above section where we discuss assessment of visitors' enjoyment.

However, different survey and interview questions were designed to gauge learning.

In our survey questionnaires, we included two questions designed to find out how much visitors have learned from the exhibit. One is open-ended and simply asks for one thing the person learned from "The Knight is Young"; responses to this question were tallied by age and gender to see which pieces of information were learned the most by each group. The other is a specific question about some of the material covered in the exhibit; during the first three weeks it was taken directly from the interactive questions, and was changed at the end of the third to something taken from the posters and labels found in the exhibit (only this second version was used in the children's survey). This helped us determine from our analysis which of the learning styles used in the exhibit are most common among the visitors.

In addition to the surveys, we conducted interviews through the sixth week, as described in detail above, of visitors as they left the "Knight is Young" exhibit. We asked these patrons to provide information such as "name one thing you learned from this exhibit". Once we obtained these data from 40 children, we were able to do a content analysis of the visitors' responses and look for patterns indicating what type of information was best conveyed by the exhibit. These results allowed us to determine how well the Royal Armouries were able to get across to the public the information they wanted people to learn.

### **3.3: Effects of age and gender on visitors' experience**

The Royal Armouries wanted us to determine how well the "Knight is Young" exhibit was received by its target audience, namely children 9-12 years old as well as

families in general. They also wished to find out whether one gender more than the other enjoyed the exhibit. This information was obtained through the analysis of the data from our observations, surveys and interviews dealing with visitor enjoyment in general, described in the relevant section. We stratified these data by age and gender in order to look for patterns in each group. By seeing the responses of each gender and age group separately, we determined, once we had all our data, whether certain groups enjoyed the exhibit more than others. This allowed us to see if our findings correlated with the intentions of the Royal Armouries in designing the exhibit for its target audience.

### **3.4: Data Analysis**

Our research generated an abundance of data, and these data needed to be organised in order to evaluate them. We collected data through a few different processes. Direct observation, surveys, and interviews were all used as forms of data collection. We needed to analyse the data from each of these methods in a different way, because all of the processes generated information in different ways.

Direct observation was the easiest type of data to collect out of the three processes because it does not actually involve visitors' responses. It consists of a person anonymously watching an individual and collecting information on a formatted checklist. This makes it clear and easy to use because all of the data collected from the individuals are collected the same way. Surveys are the most difficult out of the three processes. Surveys are more difficult because they have to be set up correctly and it can be a problem to find people willing to fill out the survey. The two previous methods were analysed as data were collected, by stratifying the participants by age, sex, or other demographics, then using Microsoft Excel to produce graphs and averages. The third form of data collection, interviewing, is the most flexible of the group. Unlike direct



observation and surveys, an interviewer can change the direction of where the interview is going. This allows the interviewers to go after the information that they feel is most important. The data from an interview can prove useful because they allow us an opportunity to compare and contrast various people's points of view. The information from interviews, as well as open-ended survey questions, was analysed in a way that permitted comparing and contrasting by putting the questions and answers in a table; a separate table was made for each age group and separated by gender. The questions were written in the top row, allowing the answers to the questions to be located in the rows under them. This enabled us to easily see all of the answers to a particular question, as well as tally the number of people who gave each type of answer.

To obtain quantitative information from our surveys, we compared people's answers to our questions, stratified by age and gender. We entered data into Excel as they were collected, and this also allowed us to see percentages and patterns as we went. We calculated the final percentages of the different answers in each group once we finished administering the survey, and looked for similarities and differences. This allowed us to see how each age group and gender perceived the exhibit, and to suggest relationships between age/gender and visitor enjoyment and learning. To analyse the information obtained from our interviews, we separated the answers into the same groups used in the surveys, tallying the number of people in each group who gave the same types of responses. We then did a content analysis to look for common ideas and to see differences between the groups. We also used this method to analyse responses to our open-ended survey questions. Overall, data analysis comprised an important part of our project and ultimately allowed us to achieve our goal of assessing "The Knight is Young".

## **4.0 Data**

In this chapter, we review the data collected from our surveys, interviews, and observations. The surveys were used to help collect a large amount of data that helped increase the validity of our findings. If this were a truly random sample, the number of surveys we collected would allow us to draw conclusions about the population of Tower visitors with a 3% sampling error (Salant and Dillman, 1994). Because of the circumstances in which we collected our data, it was not possible to obtain a completely random sample, but we attempted to make the sample as random as possible. Therefore, our data should still give an accurate representation of the visitors. Interviews were used in conjunction with the surveys when needed, such as with young children. Observations were applied to find the areas of the exhibit that could prove useful in the design of a future exhibit. This information will be used in Chapter 5.0 to draw conclusions about “The Knight is Young” exhibit.

### **4.1 Survey I, II, Children’s Survey, and Interviews**

To validate our findings, a large volume of data was collected using surveys. Three different surveys were used to collect the visitors’ opinions: Survey I & II and the child survey. In Survey I and II, there were eight questions total. The first three questions were multiple-choice, questions five through eight were open-ended. In Survey I, question four was multiple-choice; while in Survey II, question four was open-ended. In these first two surveys, all but one question remained the same. The first three questions gave the patrons a choice to rate their feelings about their enjoyment, attitude about the subject, and change in attitude. Questions Five through Eight gave the patrons a chance to voice their feelings about their favorite part, what they learned, what they did not like, and how they felt about Playmobil. In Question Four of Survey I, the visitors were asked

to answer an open-ended question in which the answer was provided in the exhibit. The visitor would have seen this answer if he or she looked at the interactive questions on the walls of the exhibit. In Survey II, Question Four asked the visitors for a piece of information that would have picked up if they read the posters on the walls of the exhibit. Interviews were used to gather answers to open-ended questions from the younger audience when the time was available for working with the children in this fashion. The questions in the children's surveys and interviews were worded differently compared to the Surveys I & II in order to allow all ages to understand the questions. In addition, two of the original survey questions were omitted in order to keep the survey simple for children. The general idea for each question in the interview and children's surveys came from Surveys I & II; the data that we acquired from the interview were placed along with surveys. In total 717 surveys were completed; 304 of which were Survey I, 196 of which were Survey II and 217 of which were child surveys. In addition, 40 interviews were conducted with children.

#### **4.1.1 Visitor Demographics**

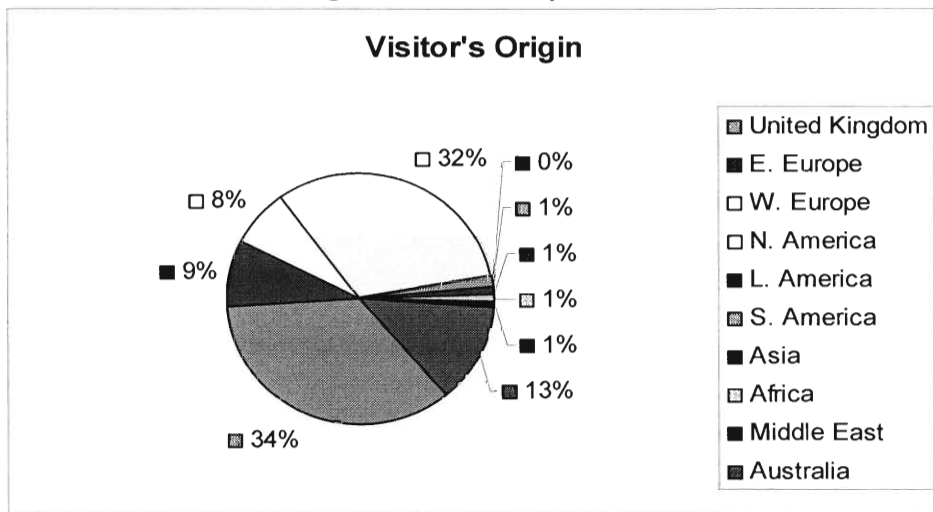
We used the visitor comment books from the opening of the exhibit until the present time, as well as our surveys, to determine the nationalities of the visitors. From the comment books, we determined that 30.66% of people who wrote comments were from English-speaking countries. In addition, a high percentage came from Western Europe (not including the United Kingdom).

### Visitor Origins From Comment Books

Geographic region	Percentage
UK	7.79 %
North America	14.63 %
South America	2.98 %
Western Europe	54.20 %
Eastern Europe	9.08 %
Africa	0.61 %
Asia	2.17 %
Middle East	0.54 %
Australia	4.2 %

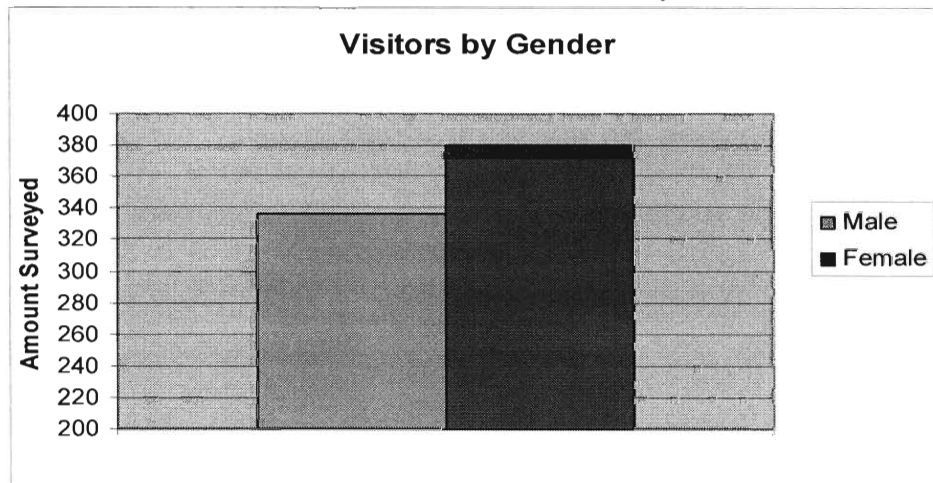
(Table Demo 4.1)

### Visitor Origins From Surveys and Comment Books



(Table Demo4. 2)

### Visitors' Genders from Surveys



(Table Demo 4.3)

#### 4.1.2 Question One – How much did you enjoy “The Knight is Young” exhibit?

We used question one of surveys I & II to evaluate the public’s enjoyment of “The Knight is Young” exhibit. This was a multiple-choice question in which the visitors were able to answer with one of four different levels of enjoyment, having no neutral ground.

##### Overall table

Here is a table of our overall results from the patrons about their level of enjoyment.

##### Overall Responses to Enjoyment of the Exhibit

Very much	58%
Some	40%
Not much	2%
Not at all	0%

*(Table 4.1 Overall)*

##### Table by gender and age

Provided below is a table of our overall results from the patrons about their level of enjoyment stratified by age and gender.

##### Male Responses to Enjoyment of the Exhibit

	Very Much	Some	Not Much	Not at All	No Response
<12	70%	27%	3%	0%	0%
13-17	52%	39%	9%	0%	0%
18-30	48%	49%	3%	1%	0%
31-65	54%	45%	1%	0%	0%
>65	82%	9%	9%	0%	0%

*(Table 4.1 M)*

##### Female Responses to Enjoyment of the Exhibit

	Very Much	Some	Not Much	Not at All	No Response
<12	60%	39%	0%	1%	0%
13-17	22%	74%	0%	4%	0%
18-30	53%	45%	1%	1%	0%
31-65	69%	30%	1%	0%	0%
>65	80%	20%	0%	0%	0%

*(Table 4.1 F)*

### 4.1.3 Question Two – How do you feel about the idea of children using arms and armour?

Question two in Surveys I & II, assessed the visitors’ attitude toward the subject matter of “The Knight is Young”. As in question one, the visitors were given a multiple choice question in which four choices were given with no neutral ground. With this question, a small percentage did not make a selection. We recorded these as ‘No Response’ so it did not affect the percentages of our results.

#### Overall table

Illustrated in the table below are the overall results of visitors’ attitude toward the subject matter in the exhibit.

#### Overall Visitors’ Attitude of Subject Matter

Interested	48%
Somewhat Interested	30%
Somewhat uncomfortable	11%
Uncomfortable	10%
No Response	1%

(Table 4.2 Overall)

#### Table by gender and age

The two tables that are shown below are the responses given for question two of the surveys separated by age and gender. *Table 4.2 M* represents that of the male’s responses and *Table 4.2 F* represents the responses of the females.

#### Male Visitors’ Attitude of Subject Matter

	Interested	Somewhat Interested	Somewhat Uncomfortable	Uncomfortable	No Response
<12	68%	20%	3%	8%	1%
13-17	64%	21%	9%	4%	0%
18-30	46%	35%	13%	6%	0%
31-65	38%	36%	13%	12%	1%
>65	64%	18%	0%	18%	0%

(Table 4.2 M)

	<b>Female Visitors' Attitude of Subject Matter</b>				
	Interested	Somewhat Interested	Somewhat Uncomfortable	Uncomfortable	No Response
<12	68%	24%	1%	4%	3%
13-17	26%	26%	26%	22%	0%
18-30	32%	41%	17%	10%	0%
31-65	35%	32%	17%	15%	1%
>65	40%	20%	20%	20%	0%

*(Table 4.2 F)*

#### **4.1.4 Question Three – How has the exhibit changed your attitude towards the idea of children using arms and armour?**

The goal of question three on our surveys was to assess visitors' reactions to "The Knight is Young" exhibit and how it affected their attitude toward children's arms and armour. This question was a multiple-choice question with only two choices, one positive and one negative. A no response category was used in the analysis of the surveys, for people who did not select one of the two choices given. This category is justified to be a neutral answer because the patrons who fall into this category did not have a strong opinion one way or another, so they have no strong urge to select either answer, showing that the exhibit has not changed their opinion.

#### **Overall table**

Presented below are the overall results the visitors gave for their change in attitude to the idea of children using arms and armour, due to the exhibit.

#### **Overall Responses to Changes in Attitude**

More Positive	45%
More Negative	33%
No Response	22%

*(Table 4.3 Overall)*

### Table by gender and age

Here are the results of the patrons attitude change about children in arms and armour separated by age groups, and then separated each age group by gender.

	<b>Male Responses to Changes in Attitude</b>		
	More Positive	More Negative	No Response
<12	70%	15%	15%
13-17	68%	21%	21%
18-30	46%	27%	27%
31-65	49%	30%	21%
>65	55%	45%	0%

*(Table 4.3 M)*

	<b>Female Responses to Changes in Attitude</b>		
	More Positive	More Negative	No Response
<12	47%	23%	20%
13-17	42%	47%	11%
18-30	43%	36%	21%
31-65	38%	35%	27%
>65	80%	20%	0%

*(Table 4.3 F)*

#### 4.1.5 Question Four

Question four on the survey is an evaluation of how well the visitors are learning information presented in the interactive and didactic styles.

Question Four A, from Survey I, as seen in appendix D, evaluates the interactive learning style by asking a question that the visitors would easily answer if they used the interactive question shields. The question was not difficult, but not straight forward either. This question was taken right from the shields, helping us prove that the patrons learned through the interactive material. However, the multiple-choice answers given on the shield were not provided on the survey. The patrons were forced to think of the correct answer and write that as their response.

Question Four B from Survey II, as seen in appendix E, evaluated the didactic learning style by asking a question that the visitors would easily answer if they had read



the posters on the walls of the exhibit. The question itself was not an easy question to answer, so a selection of three multiple choices were provided. The visitors would still have to think to answer the question, but they would have to remember what they read. Both Questions Four A and Question Four B were evaluated as being correct, incorrect or no response.

#### **4.1.5.1 Question Four A – Based on what you have learned from the exhibit, why were children allowed to own swords?**

This question evaluated the effectiveness of the exhibit’s use of the hands-on learning style to convey the information to the visitors.

##### **Overall on Question Four A**

We first looked at the statistics of all age groups and genders combined; our results are illustrated in the table below. The questions were evaluated as being correct, incorrect, or no response. The table below shows the results for the visitors overall.

##### **Overall Correct/Incorrect Answers**

Correct	63%
Incorrect	12%
No Response	25%

*(Table 4.4A Overall)*

##### **By gender and age on Question Four A**

Stratifying our results by age and gender also proved very useful. We first separated age groups, and then separated each age group by gender. This stratification has proven useful, as there are notable differences. Some age groups and gender separations showed no significant change in results. As stated earlier, the answers that were given were determined to be either correct, incorrect or no response. *Table 4.4AM* provided below represent the males stratified by age, and *Table 4.4A F* the females stratified by age.

**Male Correct/Incorrect Answers**

	Correct	Incorrect	No Response
<12	80%	20%	0%
13-17	50%	30%	20%
18-30	67%	10%	23%
31-65	70%	5%	25%
>65	29%	29%	42%

*(Table 4.4A M)*

**Female Correct/Incorrect Answers**

	Correct	Incorrect	No Response
<12	40%	60%	0%
13-17	100%	0%	0%
18-30	64%	10%	26%
31-65	53%	16%	31%
>65	100%	0%	0%

*(Table 4.4A F)*

**4.1.5.2 Question Four B – Based on what you have learned from the exhibit, who wore skirts in medieval times?**

This question evaluates the effectiveness of the exhibit’s use of the didactic learning style to convey the information to the visitors.

**Overall on Question Four B**

We first looked at the statistics of all age groups and genders combined; our results are illustrated in the table below.

**Overall Correct/Incorrect Answers**

Correct	82%
Incorrect	15%
No Response	3%

*(Table 4.4 B Overall)*

**By gender and age on Question Four B**

Stratifying our results by age and gender also proved very useful. We first separated age groups, and then separated each age group by gender. Some age groups and gender separations showed no significant change at all in results, while others

showed noteworthy differences. *Table 4B M* provided below represent the males stratified by age, and *Table 4B F* the females stratified by age.

<b>Male Correct/Incorrect Answers</b>			
	Correct	Incorrect	No Response
<12	82%	17%	1%
13-17	74%	26%	0%
18-30	75%	19%	6%
31-65	76%	21%	3%
>65	75%	0%	25%

*(Table 4.4B M)*

<b>Female Correct/Incorrect Answers</b>			
	Correct	Incorrect	No Response
<12	80%	17%	3%
13-17	87%	13%	0%
18-30	94%	4%	2%
31-65	87%	5%	8%
>65	100%	0%	0%

*(Table 4.4B F)*

#### **4.1.6 Question Five – What was your favourite part of the exhibit?**

Question five on the survey and interview allows the patrons to identify what part of the exhibit they liked the most. This question is open-ended so the visitors are not forced into answering with an object that really was not their favorite piece. This shows which parts of the exhibit are effective in obtaining the public’s interest. The results below exemplify the key points and reoccurring themes in the surveys.

#### **Question 5 Overall Most Common Responses**

<b>Common Responses</b>	<b>Number of Responses</b>	<b>Percentage</b>
Children’s armour display	259/717 responses	36%
No response	58/717 responses	8%
Toy replicas	55/717 responses	8%
Playmobil	36/717 responses	5%

*(Table 4.5 Overall )*

Most of the age groups and gender divisions conformed to this overall pattern, there were a few that stood out, however. Those responses were:

**Question 5 Females 18-30 Most Common Responses**

<b>Common Responses</b>	<b>Number of responses</b>	<b>Percentage</b>
Children’s armour display	30/143 responses	21%
Interactive Questions	19/143 responses	13%
Playmobil	18/143 responses	12%

*(Table 4.5F 18-30)*

**Question 5 Males and Females <12 Difference in Opinion**

	<b>Common Responses</b>	<b>Number of Responses</b>	<b>Percentage</b>
<b>Males</b>	Weapons	43/120 responses	36%
<b>Females</b>	Weapons	9/97 responses	9%

*(Table 4.5MF <12)*

**4.1.7 Question Six – What is one thing that you learned from the exhibit?**

This question helps to identify from which parts of the exhibit visitors are learning and the correlating teaching methods. The results that we found were:

**Question 6 Overall Most Common Responses**

<b>Common Responses</b>	<b>Number of Responses</b>	<b>Percentage</b>
No response	99/560 responses	18%
That armour was worn by kids	88/560 responses	16%
Children had guns/swords	36/560 responses	6%
Children trained at a young age	20/560 responses	4%

*(Table 4.6 Overall)*

One group that did not conform to the overall pattern:

**Question 6 Females 18-30 Most Common Responses**

<b>Common Responses</b>	<b>Number of Responses</b>	<b>Percentage</b>
No response	41/143 responses	29%
That armour was worn by kids	29/143 responses	20%
There was no girl armour	17/143 responses	12%

*(Table 4.6F 18-30)*

#### 4.1.8 Question Seven – What was one thing that you did not like about the exhibit?

Question seven enables the patrons to identify any parts of the exhibit that they did not like. This allows us to see which parts of the exhibit were not effective or bothersome to visitors and make suggestions of how it could be improved. The common reoccurring themes were:

<b>Question 7 Overall Most Common Responses</b>		
<b>Common Responses</b>	<b>Number of Responses</b>	<b>Percentage</b>
Nothing	252/717 responses	35%
No Response	217/717 responses	30%
Remove Playmobil section	33/717 responses	5%
Need more interactive parts	11/717 responses	2%

*(Table 4.7 Overall)*

There were no significant differences by age or gender. Females 18-30 had the greatest number of different responses: 32. Males 13-17 had the least number of different responses: 7.

#### 4.1.9 Question Eight – How do you feel about Playmobil sponsoring “The Knight is Young”?

Question eight allows for the patrons to share their opinions on the sponsorship role of Playmobil in the exhibit. The data will provide information to possible sponsors to help them determine if funding an exhibit is a wise decision. To analyze these responses, all answers were categorized into positive, negative, and neutral comments.

The common results were:

<b>Question 8 Overall Responses</b>		
<b>Common Responses</b>	<b>Number of responses</b>	<b>Percentage</b>
Positive	487/717 responses	68%
Negative	127/717 responses	18%
Neutral	102/717 responses	14%

*(Table 4.8 Overall)*

There were no significant differences by age or gender.

## **4.2 Ant Trails and Observations**

Observations of the exhibit helped us to determine which parts of the exhibit were effective and which parts were less effective. First, we used ant trails, as discussed in Chapter 2.7.2 Data Collection Methods, to determine key spots in the exhibit. These key spots were the areas that received the most attention, along with the areas that received the least attention. Then, we focused on these specific places to see if there were any reasons for their popularity or unpopularity. This was done through the use of observation sheets, as shown in Appendix C.

### **4.2.1 Ant Trail Evaluations**

Ant trails were applied to determine what parts of the exhibit attracted the most attention from the visitors, as well as the parts of the exhibit that seemed to attract less attention. While conducting the ant trails, as discussed in Chapter 2.7.2 Data Collection Methods, we were able to follow specific people around the exhibit to get the paths that the visitors took when walking through “The Knight is Young”. The visitors we followed through the exhibit also enabled us a chance to see which parts of the exhibit that they stopped at and how long they stayed at these locations. We conducted a total of 84 ant trails and were able to determine the areas of greatest interest and least interest as shown in Table Ant 4.1.

### Portions of Exhibit Viewed by Visitors

Playmobil interactive cases	40/84 = 48%
King Charles I armour	49/84 = 58%
“Charles II” Poster	6/84 = 7%
Interactive Board Set I	18/84 = 22%
Interactive Board Set II	23/84 = 27%
“Honourable Hanoverians” Poster	4/84 = 5%
Toy Rifle	4/84 = 5%
“Boyz Toyz” Display of Toy Armour	14/84 = 16%

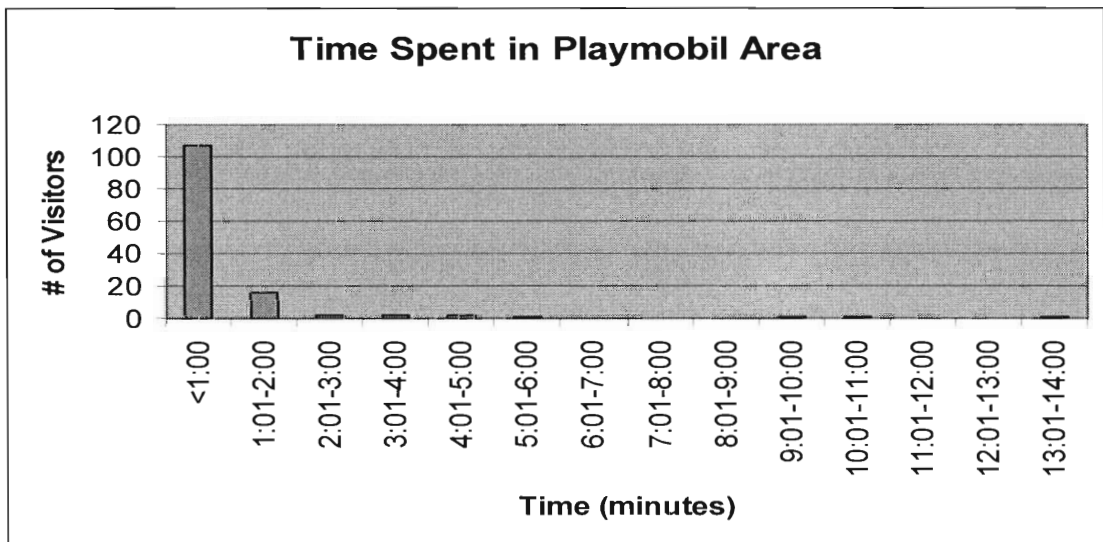
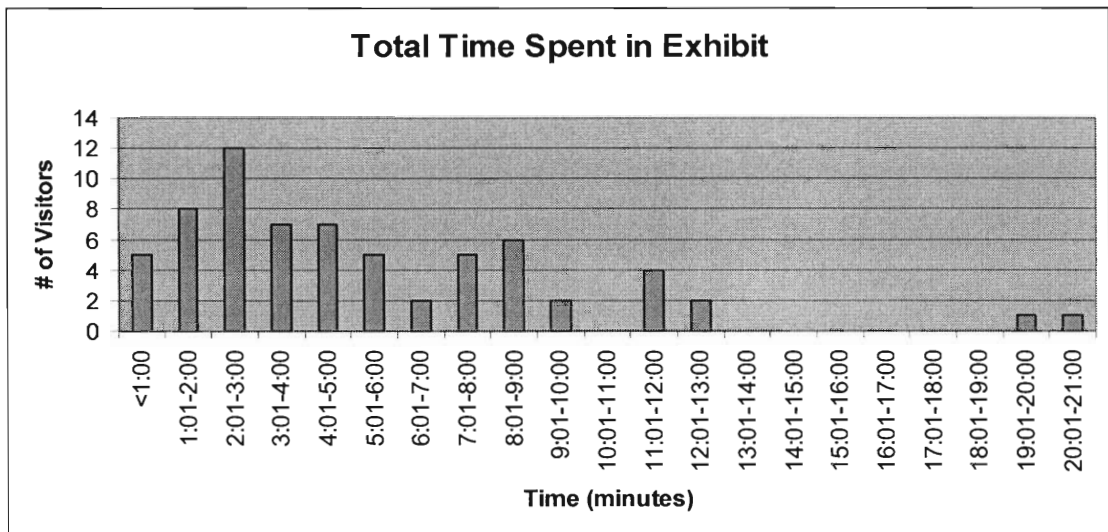
*(Table Ant 4.1)*

There were three areas that received the most attention from the visitors to “The Knight is Young”. The first area was in the Playmobil section of the exhibit where children were able to construct their own castles using the Playmobil toys. Next, was the full suit of armour worn by King Charles I when he was six years old. This was located in a glass display case next to the first hairpin turn in the exhibit. The third popular area was the two sets of interactive boards that were shaped like shields and contained questions and answers pertaining to the exhibit.

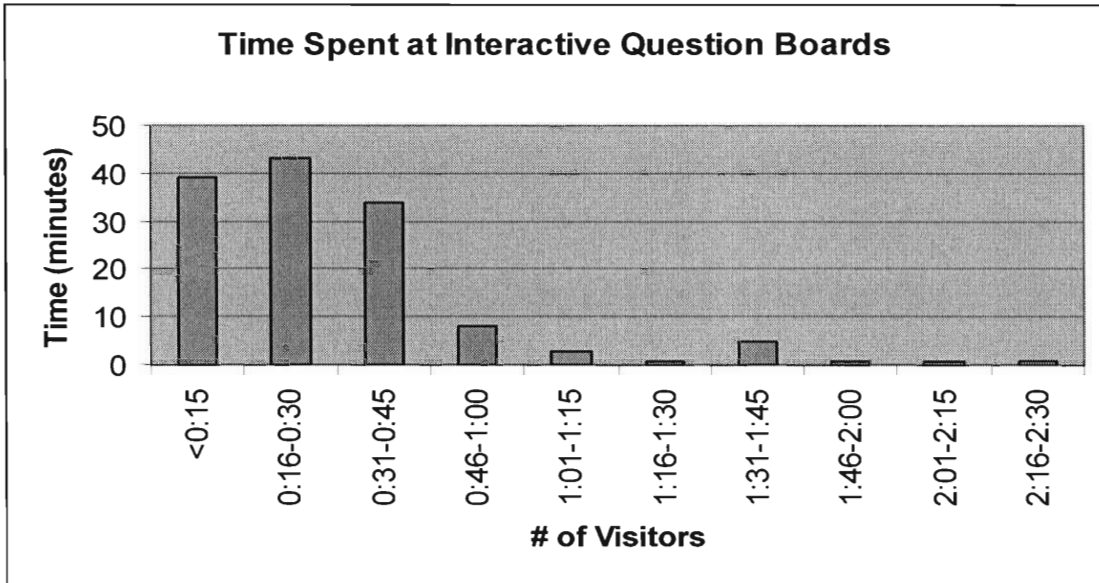
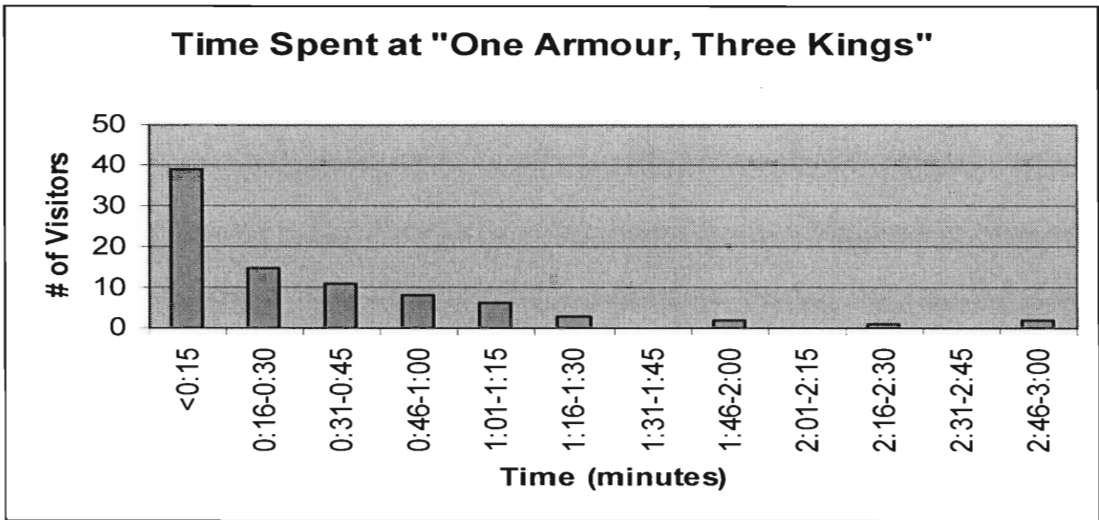
There were two locations that visitors stopped the least frequently. One location was the ‘Honourable Hanoverians’ poster that was located between a glass display case of children’s armour and a glass display case of children’s weapons. The other area that did not receive that much attention was a single toy rifle that was in a display case in the Boyz Toyz section of the exhibit.

### 4.2.2 Observation Sheets

With the observation sheets, we examined in more detail the spots determined through the ant trails to be popular and unpopular. People’s reactions at these spots were gathered through direct observation of their body language and writing of their comments. The time that the visitors spent viewing and reading the spots was also recorded to determine the ‘holding power’ of that part of the exhibit. The following graphs depict how much time visitors spent in the exhibit and certain parts of the exhibit.







### 4.3 Sponsorship Survey

In order to find the visitors' views on corporate sponsorship, we administered a survey dealing with this idea only. This survey consisted of three questions allowing us to get positive or negative responses. We then stratified them by age and gender to see if visitors' opinions varied at all between age groups or by gender.

#### 4.3.1 Question One – Did you know that Playmobil was a sponsor of this exhibit?

This question enabled us to see if visitors knew that Playmobil was the sponsor to “The Knight is Young”. We wanted to find this out because it was not clearly posted anywhere that Playmobil was the sponsor of the exhibit.

##### Question One Overall Responses

	Yes	No
Overall	42%	58%
Male Overall	30%	70%
Female Overall	52%	48%

(Table 4.3.1)

#### 4.3.2 Question Two – How do you feel about Playmobil sponsoring “The Knight is Young”?

Question Two gave us insight into the visitors’ opinion of Playmobil sponsoring the exhibit. This was done upon request of The Tower of London to hopefully obtain further sponsorship from Playmobil.

##### Question Two Overall Responses

	Positive	Neutral	Negative
Overall	74%	19%	7%
Male Overall	67%	24%	9%
Female Overall	79%	13%	8%

(Table 4.3.2)

### 4.3.3 Question Three – Would you support commercial sponsorship of future exhibits in the White Tower?

The third question on the Sponsorship Survey allowed us to get an idea of how the visitors felt about future corporate sponsorship in the White Tower. With this information, The Tower of London will hope to gain future sponsorship of exhibits from other corporations.

#### Question Three Overall Responses

	Positive	Neutral	Negative
Overall	68%	18%	14%
Male Overall	66%	16%	18%
Female Overall	70%	15%	15%

*(Table 4.3.3)*

## **5.0 Analysis**

From our research, we have found a good deal of useful information about the success of “The Knight is Young”. In many cases, there were no significant differences in responses between gender and age groups, while in other cases some groups differed substantially from one another. In this section we will examine these patterns and attempt to explain them.

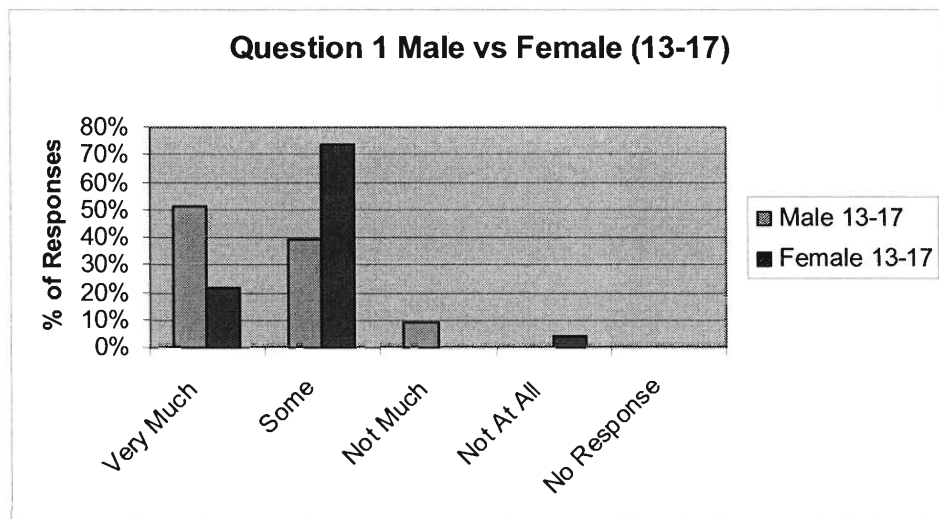
### **5.1 Visitor origins**

Table Demo 4.1 in Chapter 4.1.1 shows visitor origins from the comment books, and then from the surveys and comment books combined. From this information, we learned that the population of visitors to the Tower of London is very diverse, with people coming from all over the world and speaking many different languages. The combined results are limited by the fact that only English-speaking visitors were able to fill out the survey, as well as the fact that many of the comments in the books were in different languages. The results from the comment books may be a more accurate representation of the true percentages than are the nationalities from the surveys, due to the fact that only people who could speak English could fill out the surveys, while the comment books allowed visitors to write comments in their native language. However, the comment book results could be skewed as well.

### **5.2 General opinion of the exhibit**

We found from our research that many visitors enjoyed “The Knight is Young”. In fact, there were very few people who did not like the exhibit. From question 1 of our survey, we were able to see that 98% of visitors enjoyed the exhibit “very much” or “some”. See Table 4.1 Overall in Chapter 4.1.2 for detailed data on enjoyment.

The people whose enjoyment levels appeared significantly different from the general pattern were the 13-17 year-olds. This group had a higher percentage of negative answers (enjoyed the exhibit “not much” or “not at all”). In addition, there was a large difference between males and females in the 13-17 age group. The majority of the females enjoyed the exhibit “some”, while more of the males enjoyed it “very much”. It appears that in this age group, boys have a better experience than girls in the “Knight is Young” exhibit.



### 5.2.1 Favourite parts of exhibit

There were clearly certain parts of the exhibit that were more popular than others, both in terms of being visitors’ favourite part and in terms of attracting the most attention as people walked through the area. The most commonly mentioned favourite part of the exhibit was the armour in general. Other common responses were the weapons and the toy armour. See Table 4.5 Overall in Chapter 4.1.6 for the detailed data. There were few age and gender differences in visitors’ favourite parts of the exhibit. From the ant trail observations, the three areas at which the most visitors stopped were as follows: the Playmobil play tables with the display case next to them; the case containing Charles I’s

childhood armour; and the interactive question area (the shields). In addition, while conducting surveys during the sixth week of our project, we noticed large crowds gathering around the shields during the half-term holiday. These popular areas are consistent with visitors' responses to the survey question about their favourite part of the exhibit.

### Comparison of favourite parts from surveys with popular areas from ant trails

Popular areas/favourite parts	Ant trails	Male 12 and under	Female 12 and under	Male 13-17	Female 13-17	Male 18-30	Female 18-30	Male 31-65	Female 31-65	Male >65	Female >65
Armour in general	NA	5/15	3/13	4/14	1/11	30/85	23/126	16/71	9/81	*	*
Interactive questions	18/84 23/84 (2 sets)	0	1/13	0	2/11	2/85	12/126	2/71	0	*	*
Charles I armour	49/84	0	0	1/14	1/11	7/85	3/126	5/71	0	*	*
Playmobil	40/84	1/15	2/13	0	3/11	4/85	12/126	1/71	1/81	*	*
Weapons	NA	6/15	0	4/14	0	7/85	5/126	6/71	1/81	*	*
Toy armour	14/84	1/15	3/13	0	1/11	1/85	10/126	10/71	4/81	*	*
Small armour	NA	0	0	0	0	10/85	5/126	1/71	15/81	*	*

\* denotes insufficient data to see a pattern (5 males and 4 females over 65)

The table above shows the fraction of people who stopped at each part of the exhibit, from the 84 ant trails, and also the number of people in each gender/age group who gave each part as their favourite. NA in the ant-trail column signifies that the given item was not a specific display and therefore could not be tracked in the ant trail.

### 5.2.2 Parts visitors did not like

In addition to definite popular areas of the exhibit, there were certain parts that attracted less attention, as seen from the ant trail observations. However, the most common response to the survey question dealing with what people did not like was “nothing”; the Playmobil section was a distant second. See Table Ant 4.3 in Chapter 4.2.1 for details.

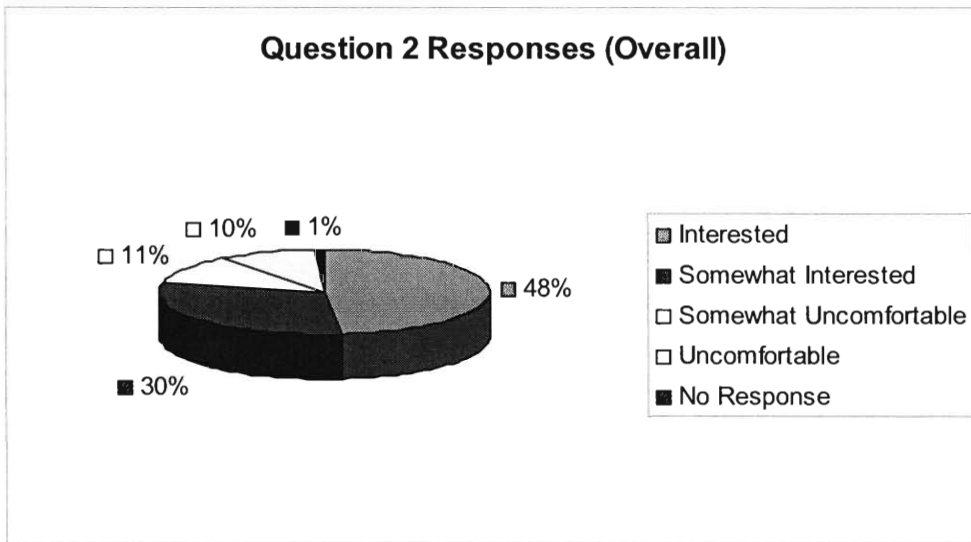
From the ant trail observations, there were two places at which few visitors stopped. These were both in the last section of the exhibit, and were as follows: the “Honourable Hanoverians” poster, which was between two case displays; and the “Boyz Toyz” poster and the toy gun in the case next to it. These areas may have been bypassed simply because they were near the end of the exhibit and people did not have as much time to look at them. Another possibility is that they were missed because they were placed between larger case displays that attracted more attention.

### **5.3 Time spent in exhibit**

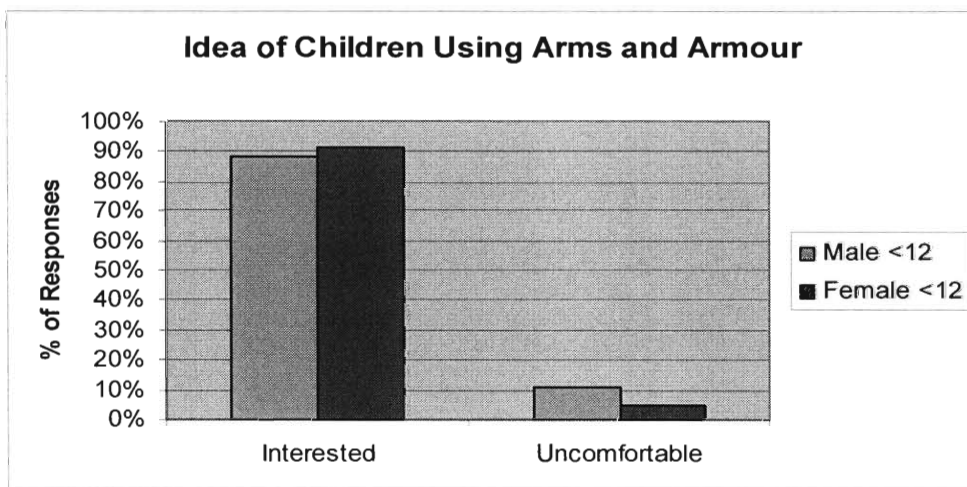
There was a wide range of times spent by visitors in “The Knight is Young” (see tables in section 4.2.2 for details). The times were anywhere from less than one minute (if a person just walked through) to 21 minutes. Most visitors spent between one and nine minutes in the exhibit. The times spent at two of the popular areas (“One Armour, Three Kings” and the interactive question boards) were somewhat similar to each other; visitors generally spent less than 1 minute and 30 seconds in these areas. However, within this range people tended to spend a longer time at the interactive questions. One possible reason for some people spending little time in the exhibit is that it is the last area in the White Tower, and therefore may be rushed through if the visitors have other areas they wish to see.

### **5.4 Attitude toward subject matter**

There was some concern among Royal Armouries staff about the subject matter of “The Knight is Young” possibly being offensive to some people, as well as being more interesting to males than to females. In fact, the majority of visitors surveyed found the subject matter interesting, although about 21% said it made them at least somewhat uncomfortable.

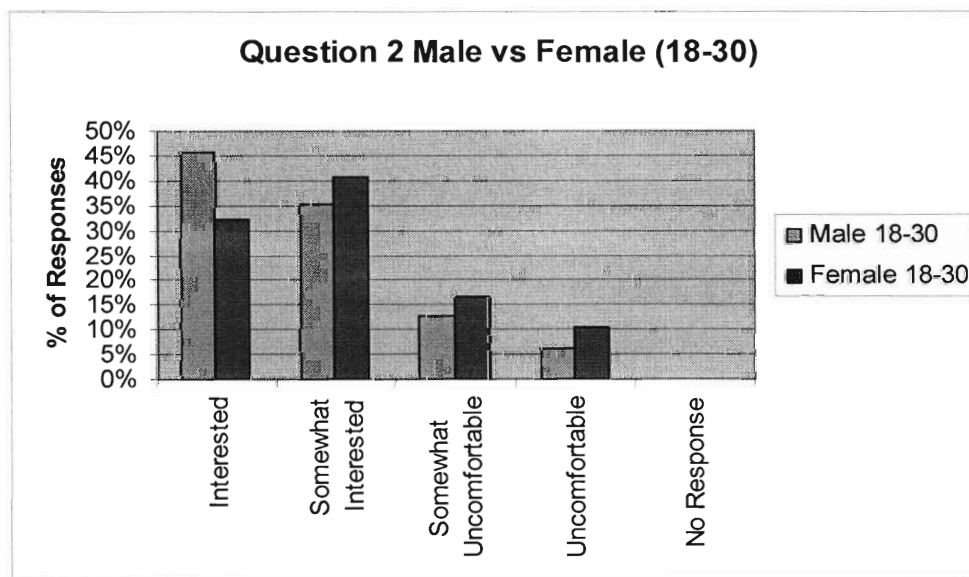
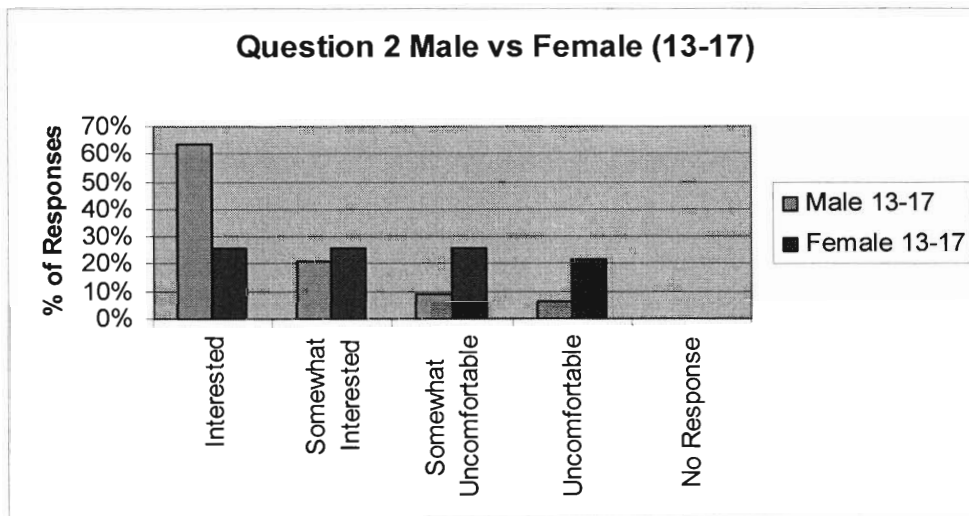


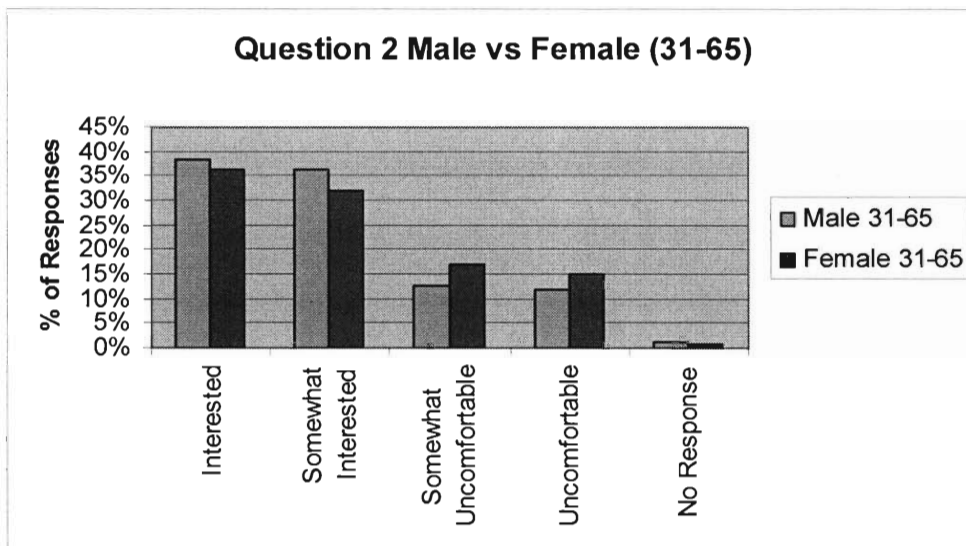
There were some significant gender differences in how people felt about the subject matter within age groups. For example, in the under-12 group there was slightly more discomfort with the subject matter among males than among females; this was different from any other age group. One possible explanation is that the boys are thinking about what it would be like to grow up in medieval times and have to learn how to fight at such a young age, and they dislike the thought of what life would be like for them at that time.





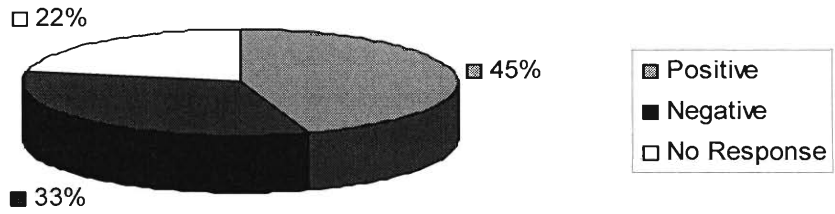
In the 13-17 age group, the opposite was true. There were more females than males who indicated discomfort with the idea of children using arms and armour. This was also true to a lesser degree in the 18-30 and 31-65 groups.



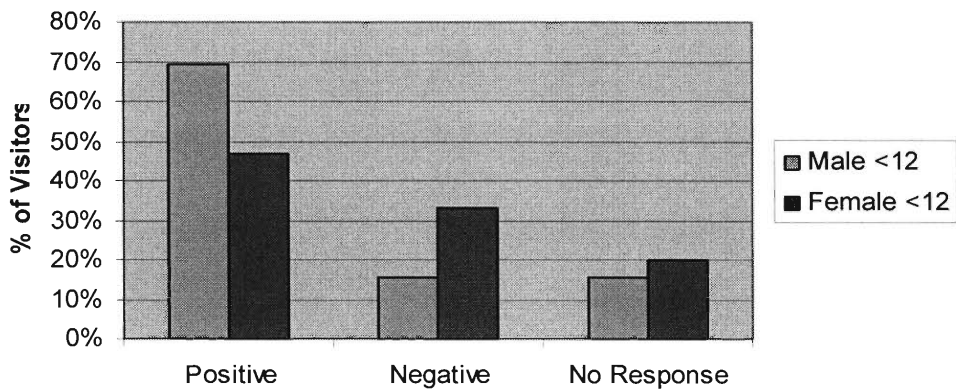


Question 3 of the survey dealt with the change in people’s attitudes toward the idea of children using arms and armour after seeing the exhibit. Overall, many people had a more positive attitude after seeing the exhibit. However, there were some significant gender differences within age groups. In the 12 and under age group, more females had a more negative opinion after seeing the exhibit than did the males. This was also true in the 13-17 group; other age groups had much less gender difference. The large difference in the two youngest groups could be due to the fact that there was little in the exhibit dealing with girls in medieval times—one poster and little else. This may have resulted in the girls becoming less interested in the subject once they saw this—they may have come away thinking the information was not relevant to them. However, the sample of visitors under 18 who responded to this question was small as it was included only on the general survey and not the children’s version.

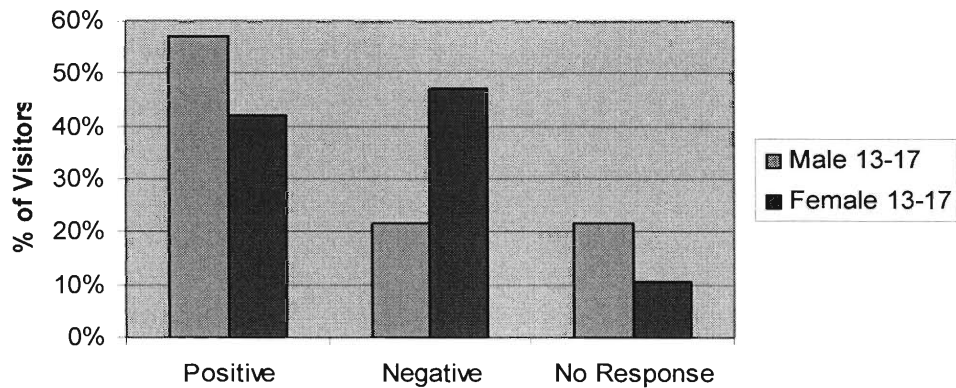
### Question 3 Responses (Overall)



### Question 3 Male vs Female (<12)



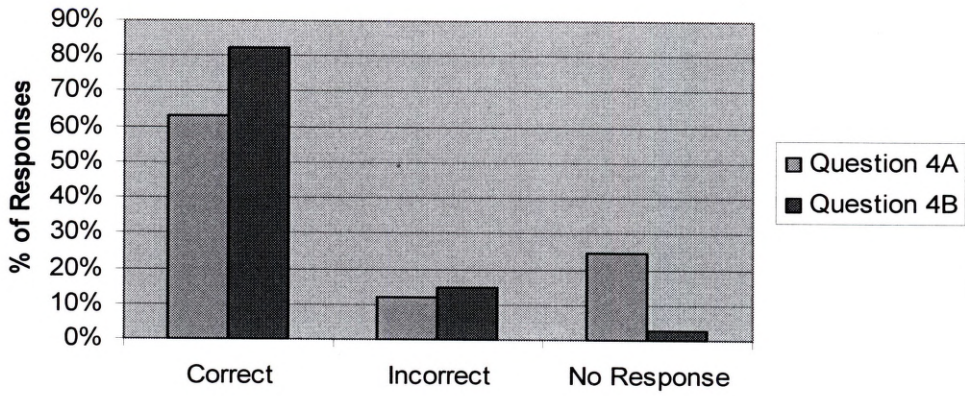
### Question 3 Male vs Female (13-17)



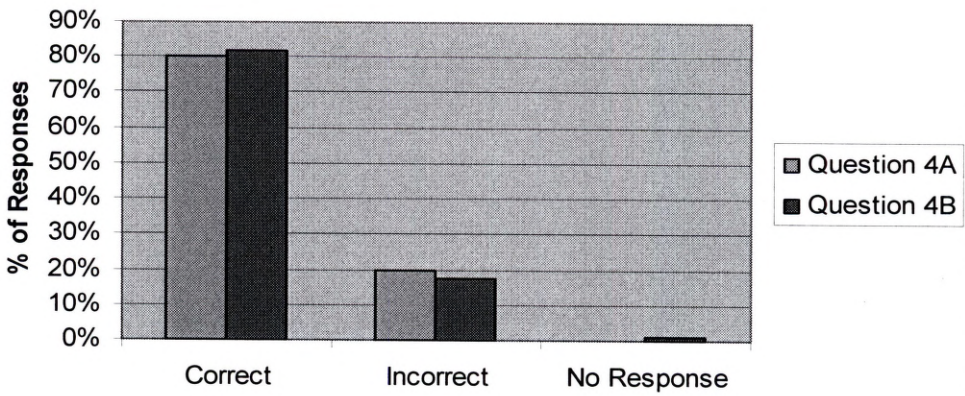
## 5.5 Learning

The Royal Armouries staff was interested in an assessment of how much visitors learned from “The Knight is Young”. There were two different forms of one of the questions used to assess learning in the survey, referred to as questions 4a and 4b. Overall, question 4b was answered correctly more often than question 4a, and also had fewer non-responses. This may be partially due to the fact that 4a was open-ended, while 4b was multiple-choice. Both questions were answered correctly the majority of the time, indicating that visitors learned from the exhibit. There were significant age and gender differences in percentages of correct answers to these questions. In the 12 and under group, the males had a higher percentage of correct answers than the females on 4a, but the percentages were about the same for both genders on 4b. In the 13-17 group, the females did better on 4a while the males did better on 4b. However, the sample of under 12 and 13-17 visitors answering question 4a was small, because the children’s survey included 4b but not 4a, and most of the data for these age groups came from the children’s survey. Among visitors between the ages of 18-30, males and females did about the same on question 4a but females did better on 4b than did males. In the 31-65 group, males did better on question 4a while females did better on 4b. No real pattern was seen in the number of correct answers by age.

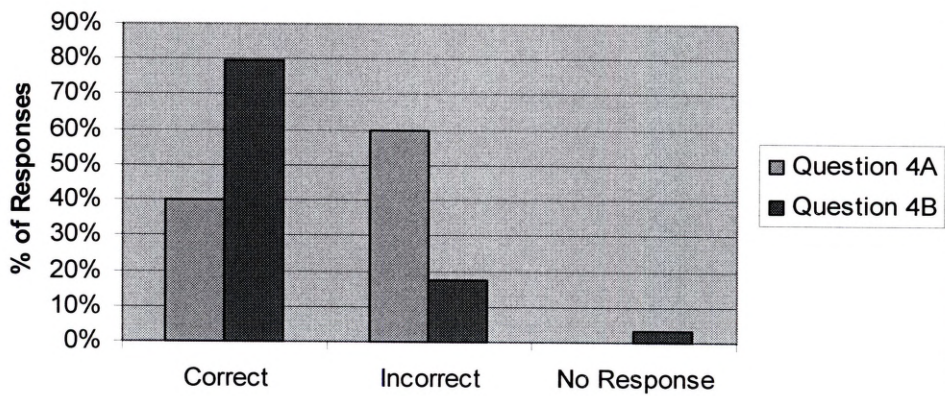
**Question 4A vs Question 4B (Overall)**



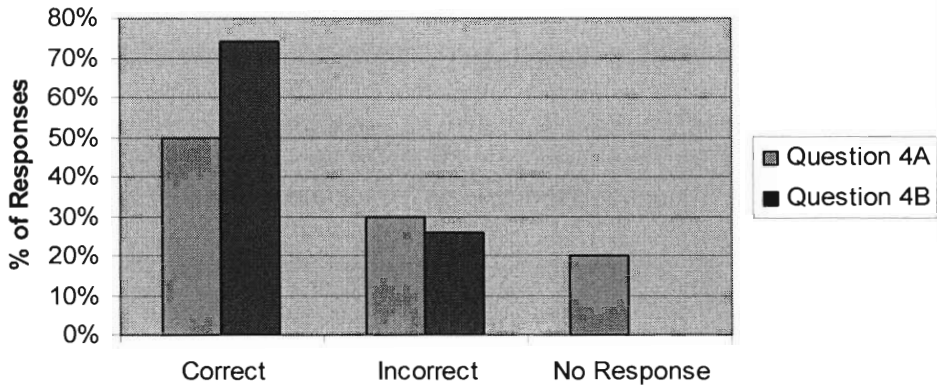
**Question 4A vs Question 4B (Male <12)**



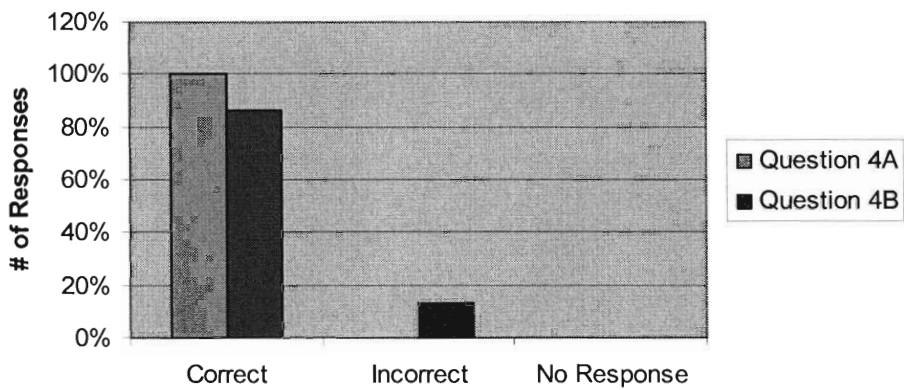
**Question 4A vs Question 4B (Female <12)**



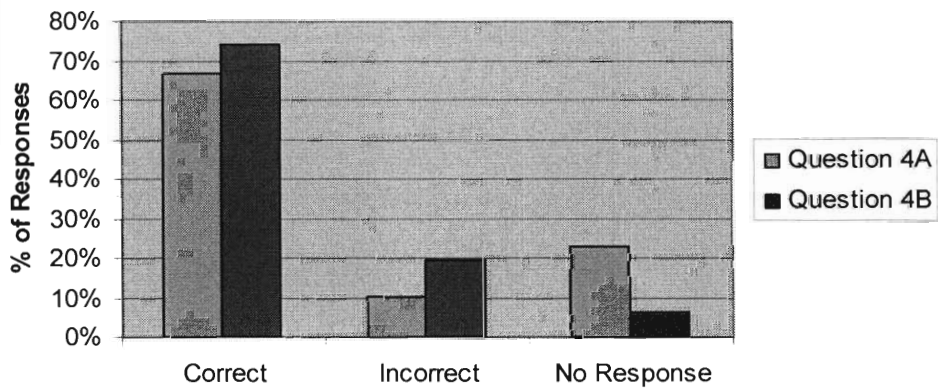
**Question 4A vs Question 4B (Male 13-17)**



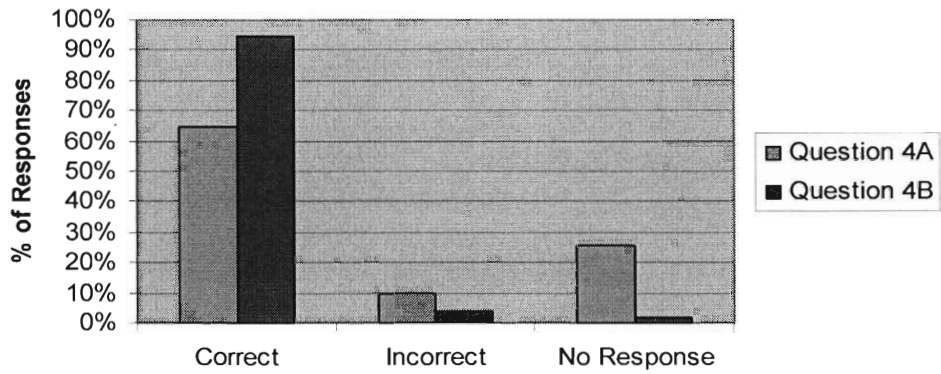
**Question 4A vs Question 4B (Female 13-17)**



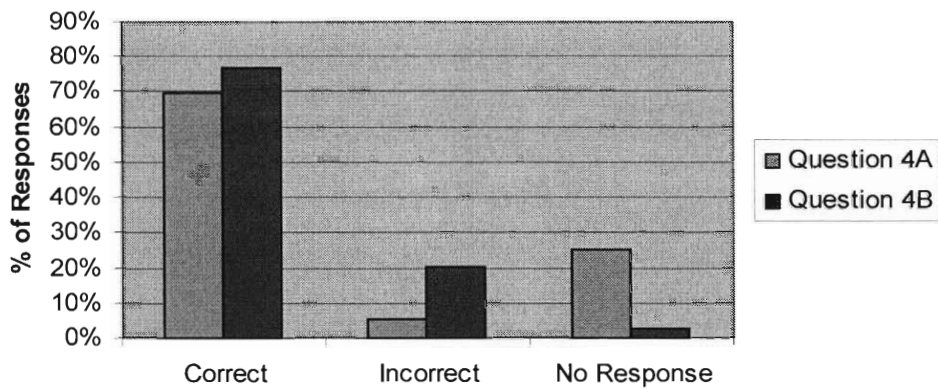
**Question 4A vs Question 4B (Male 18-30)**



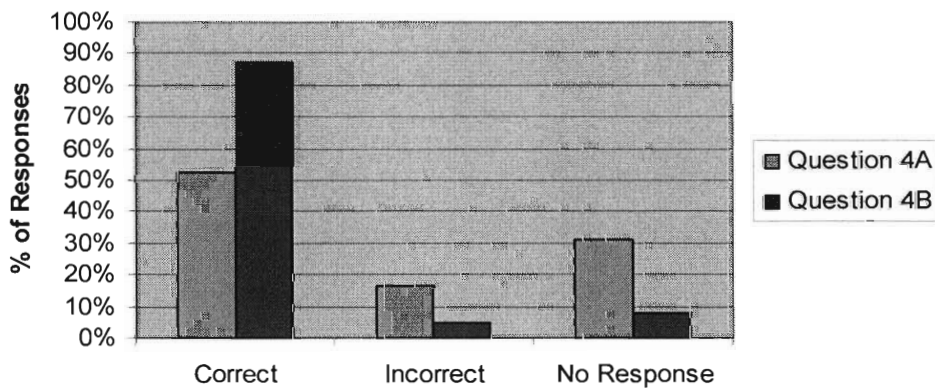
**Question 4A vs Question 4B (Female 18-30)**



**Question 4A vs Question 4B (Male 31-65)**



**Question 4A vs Question 4B (Female 31-65)**



The other way of assessing visitors' learning was to ask them to write down one thing they learned from the exhibit. The most common response was that people learned that children had armour. Many people did not know this before seeing the exhibit. The top responses for each age and gender are in the table on the top of the next page. The small numbers of responses for visitors under the age of 18 is due to the fact that this question was omitted from the children's survey in the interest of keeping it brief.

**Most common information learned from “The Knight is Young”, by age and gender**

	12 and under	13-17	18-30	31-65	Over 65
Males	Kids had armour (4/14) Nothing (4/14)	Kids had guns (2/12)	Kids had armour (14/85) Children fought (4/85)	Kids had armour (15/61)	*
Females	Kids practiced with weapons (3/11) Boys wore skirts (2/11)	Kids had armour (2/11)	Kids had armour (20/111) Trained young (8/111)	Kids had armour (17/77)	*

There were few age and gender differences in what people learned from “The Knight is Young”. This is probably because so many people never knew that children used armour in the past, so this is a major piece of information they learned that stands out in their mind. However, a few people came away from the exhibit with erroneous information—there were four males in the 18-30 age group who said they learned that children fought. Children in medieval times did not, in fact, fight; they simply practiced in order to learn how to fight when they were older.

**5.6 Opinions on sponsorship**



Another piece of information that the Royal Armouries were interested in was the public's opinion on Playmobil's involvement in "The Knight is Young". We used one of our regular survey questions to assess this, and were also able to use our sponsorship survey to obtain more detailed information from 97 visitors on this topic. We found that overall, most visitors had a positive opinion of Playmobil's sponsorship (see tables 4.8 overall and 4.3.2). The sponsorship survey showed females to have a more positive opinion than males, but the percentages of negative opinions were about the same between the genders.

One interesting finding from the sponsorship survey was that more than half of those surveyed were not aware that Playmobil was the sponsor of "The Knight is Young" (see table 4.3.1). Females were aware of it more often than were males, but still about half did not know about the sponsorship. This lack of awareness may be due to the fact that on the posters promoting the exhibit, only in the bottom corner does it say "Sponsored by Playmobil".

In addition to the specific information dealing with Playmobil, we also included a question in our sponsorship survey dealing with visitors' opinions on corporate sponsorship in general. The results of this question indicated that most people would have no problem with commercial sponsorship of future exhibits in the White Tower (see table 4.3.3). There was no significant gender difference in responses.

## **5.7 Times spent in Playmobil area**

There was a wide range of times spent in the Playmobil section at the beginning of the exhibit (see graph in section 4.2.2). Most visitors spent less than one minute in this area, but some (children) stayed in the room as long as 14 minutes. It appeared that

children tended to be interested in this area but adults only spent a significant amount of time there if they had children with them (and had the patience).

## **6.0 Conclusions and Recommendations**

From our research on “The Knight is Young”, we came to the overall conclusion that the Royal Armouries achieved their goals with the exhibit. The overwhelming majority of visitors enjoyed it, and most people learned from it. In addition, opinions of Playmobil’s sponsorship were generally positive. We were able to make several recommendations to the Royal Armouries to make future exhibits as effective as possible; these recommendations and our conclusions are discussed in this section.

### **6.1. Visitor Origins and Languages**

Visitors come to the Tower of London from all over the world. A large percentage (about 54%) are from Western European countries other than the United Kingdom. Only about 31% of visitors to the Tower are from English-speaking countries. This means it would be ideal to make translations available of labels and posters in exhibits, for the large numbers of visitors who do not speak English. However, the costs of doing so can be prohibitive. One possible way of getting around this would be to have a simple printed sheet containing translations into a few different languages, which visitors could pick up at the entrance to the exhibit. Based on the origins of visitors as seen in the comment books, translations into the following languages would be the most useful: Spanish, Italian, German and French. These four countries were highly represented in the comment books, and in addition Spanish is commonly spoken in many other countries besides Spain.

### **6.2. Enjoyment of exhibit**

The vast majority (98% overall) of visitors enjoyed “The Knight is Young”. The results of our survey show that the Royal Armouries achieved their goal of presenting children’s arms and armour in a manner that would interest the public. In fact, when

asked for their favourite part of the exhibit, visitors most commonly said they liked the armour itself. Our observations showed that patrons stopped most often to look at the display with Charles I's childhood armour, as well as the interactive question area and the Playmobil play area. Given that two of these areas (the questions and the play area) were interactive, our main recommendation for future exhibits is to use as many interactive displays as possible. The less popular areas were located near the end of the exhibit and were placed between larger displays that attracted more attention. Therefore, we suggest that if there is a particular artefact or piece of information that the Armouries feel is more important than others, it should be placed in an area where it stands out, and well before the exit. This will help to ensure that other displays (or the desire to hurry out and get to the next place) do not take visitors' attention away from it.

### **6.3. Subject matter**

Visitors to "The Knight is Young" showed a range of attitudes toward the subject matter of the exhibit. Many people (78% of those surveyed) found the idea of children using arms and armour interesting, while others were uncomfortable with it. Changes in visitors' attitudes after seeing exhibit were more positive than negative overall (45% more positive and 22% neutral), but some groups differed significantly from this pattern. Females in all but the over-65 age group had a negative change in attitude after seeing the exhibit more often than did males. The difference was minor in the 18-30 and 31-65 groups, but very pronounced in the under-12 and 13-17 age groups (see tables in Data section). This may be due to the lack of information about the life of girls in medieval times. Our suggestion for future exhibits is to include more information about what life was like for girls as well as boys during the given time in history. This may help keep

girls more interested and lead to their developing a more positive attitude toward the subject matter as a result of seeing the exhibit.

#### **6.4. Learning**

The Royal Armouries achieved their goal of having visitors learn about arms and armour from “The Knight is Young”. Both the didactic and interactive methods of presenting information were effective, as shown by the fact that the majority of visitors correctly answered the specific learning question on both forms of the survey. Therefore, future exhibits should make use of both methods to ensure that visitors learn as much as possible. The exhibit was also successful in teaching patrons more general information about life in medieval times; the most common responses to the open-ended learning question (see appendix D&E) were “children wore armour/had weapons/trained at a young age”. Many people did not know this before seeing the exhibit, so they learned a bit about medieval life by seeing “The Knight is Young”.

#### **6.5. Playmobil sponsorship**

Overall, visitor opinions of the Playmobil sponsorship were positive (487 (68%) of the 716 visitors surveyed in the general questionnaire, and 72 (74%) of the 97 visitors surveyed in sponsorship questionnaire). In addition, most (68%) of the visitors who responded to the sponsorship survey said they would support future commercial sponsorship of exhibits in the White Tower. Many of the people who gave positive responses to the questions specifically about Playmobil’s sponsorship said it was good for the children and helped get them interested in the exhibit. The negative responses we received were often about the toy display being “inappropriate” or “out of place” in a historical site such as the Tower of London. In the future, it may be helpful to make known the fact that the exhibit would not have been possible without funding from the

given corporation; this may make people feel more positive about the commercial sponsorship. This may be an especially good idea in view of the fact that more than half of those surveyed were not aware that Playmobil was the sponsor of “The Knight is Young”.

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- Wittlin, Alma S. (1970). Museums. Cambridge, MA: The MIT Press.



## **Appendix A: Mission and Background of The Royal Armouries**

The Royal Armouries is the organization in England that is responsible for collecting and housing arms and armour. This organization is located in three different places throughout England and each location houses a collection (Royal Armouries, 2003). The newest location is the Museum in Leeds which was established in 1996. The Museum at Leeds is currently the location that gets focused on the most by the Royal Armouries. Currently, it is the site where the national arms and armour collection is housed. Another location is at Fort Nelson in Portsmouth. A majority of the Royal Armouries gun collections are held at Fort Nelson. The third location is at the Tower of London, which is also where the exhibit that we will be evaluating, 'The Knight is Young', is located. This location has a collection of arms and armour and also is the home of the Royal Family's crown jewels. The Tower of London has played a role in England's history since the 14<sup>th</sup> century.

The Royal Armouries has a mission statement that it actively follows. The mission statement is to bring arms and armour to a wider range of the public and to make the studies of arms and armour more accessible to all (Clifford, 2003). The Royal Armouries accomplishes this in many ways. They have educational programs that are open to the public and to the local school systems. On top of this, they have exhibits that have guided tours allowing the visitors an opportunity to learn about the sites and get questions answered. All of these components allow the museum to reach the public and educate them.

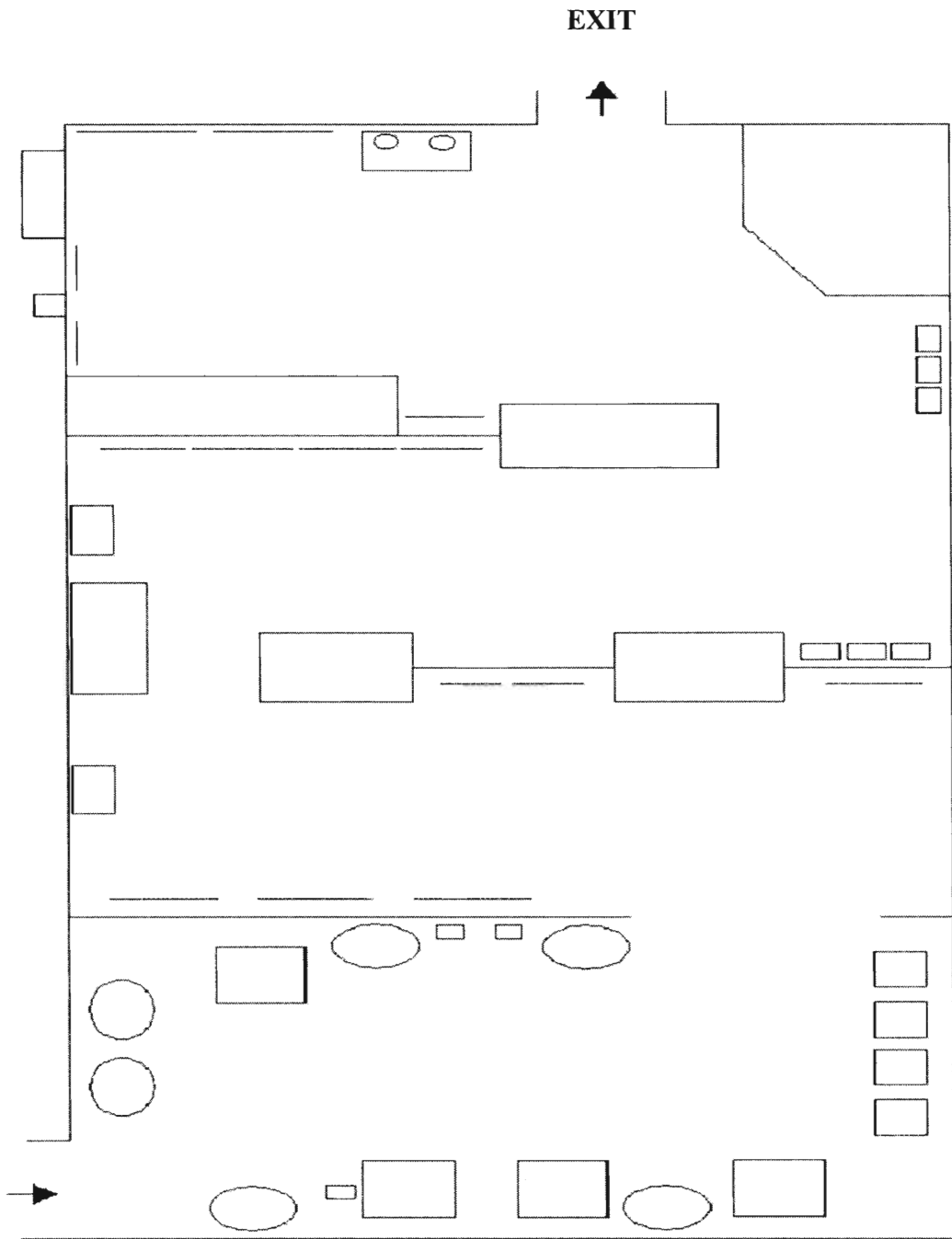
**Appendix B: Ant Trail Evaluation Sheet**

Age:

Gender:

Enter time:

Exit time:



**ENTER**

**Appendix C: Observation Sheet**

Observer:

Date:

Location:

1.	M	F	AGE	READ?	TIME SPENT	COMMENTS
2.	M	F		Y N	:	
3.	M	F		Y N	:	
4.	M	F		Y N	:	
5.	M	F		Y N	:	
6.	M	F		Y N	:	
7.	M	F		Y N	:	
8.	M	F		Y N	:	
9.	M	F		Y N	:	
10.	M	F		Y N	:	
11.	M	F		Y N	:	
12.	M	F		Y N	:	
13.	M	F		Y N	:	
14.	M	F		Y N	:	
15.	M	F		Y N	:	
16.	M	F		Y N	:	
17.	M	F		Y N	:	
18.	M	F		Y N	:	
19.	M	F		Y N	:	
20.	M	F		Y N	:	
21.	M	F		Y N	:	
22.	M	F		Y N	:	
23.	M	F		Y N	:	
24.	M	F		Y N	:	
25.	M	F		Y N	:	

## **Appendix D: Survey I**

Please circle your gender and age group:

	Male	Female		
12 and under	13-17	18-30	31-65	Over 65

Nationality: \_\_\_\_\_

1.) How much did you enjoy the “The Knight is Young” exhibit?

Very much

Some

Not much

Not at all

2.) How do you feel about the idea of children using arms and armour?

Interested

Somewhat Interested

Somewhat uncomfortable

Uncomfortable

3.) How has the exhibit changed your attitude toward the idea of children using arms and armour?

Made it more positive

Made it more negative

4.) Based on what you learned from the exhibit, why were children allowed to own swords?

5.) What was your favourite part of the exhibit?

6.) Fill in one thing you learned from the exhibit...

7.) What is one thing you didn't like about the exhibit?

8.) How did you feel about Playmobil sponsoring “The Knight is Young”?

## **Appendix E: Survey II**

Please circle your gender and age group:

	Male	Female		
12 and under	13-17	18-30	31-65	Over 65

Nationality: \_\_\_\_\_

1.) How much did you enjoy the “The Knight is Young” exhibit?

Very much

Some

Not much

Not at all

2.) How do you feel about the idea of children using arms and armour?

Interested

Somewhat Interested

Somewhat uncomfortable

Uncomfortable

3.) How has the exhibit changed your attitude toward the idea of children using arms and armour?

Made it more positive

Made it more negative

4.) Based on what you learned from the exhibit, who wore skirts in medieval times?

Girls only

Guys only

Both guys and girls

5.) What was your favourite part of the exhibit?

6.) Fill in one thing you learned from the exhibit...

7.) What is one thing you didn't like about the exhibit?

8.) How did you feel about Playmobil sponsoring “The Knight is Young”?

## Appendix F: Children's Survey

### **"The Knight is Young"** Children's Survey

1. Are you a boy or girl?
2. How old are you?
3. Did you like "The Knight is Young"?
  - I liked it a lot
  - I liked it a little
  - I didn't like it much
  - I didn't like it at all
4. What do you think about how kids used armour and weapons?
  - It's very interesting
  - It's a little interesting
  - It bothers me a little
  - It bothers me a lot
5. Based on what you have learned, who wore skirts in medieval times?
  - Girls only
  - Boys only
  - Both boys and girls
6. What did you like the best in "The Knight is Young"?
7. What is one thing you didn't like in "The Knight is Young"?
8. Did you like the Playmobil Room?

**Appendix G: Playmobil Survey**

**Please circle age and gender:**

		Male	Female			
10-20	20-30	30-40	40-50	50-60	60-70	Over 70

1. Did you know that Playmobil was the sponsor of this exhibit?
2. How do you feel about Playmobil sponsoring “The Knight is Young”?
3. Would you support commercial sponsorship of future exhibits in the White Tower?

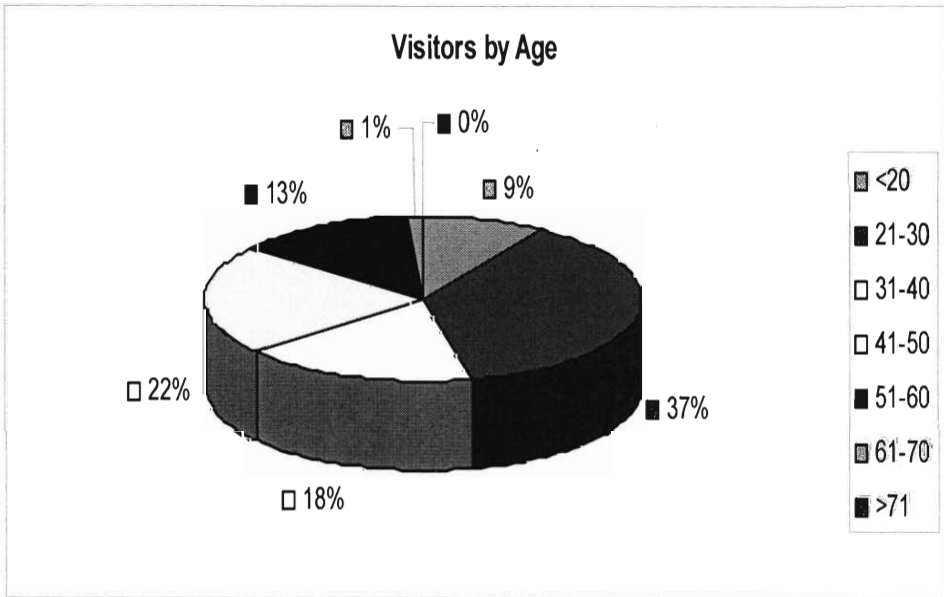
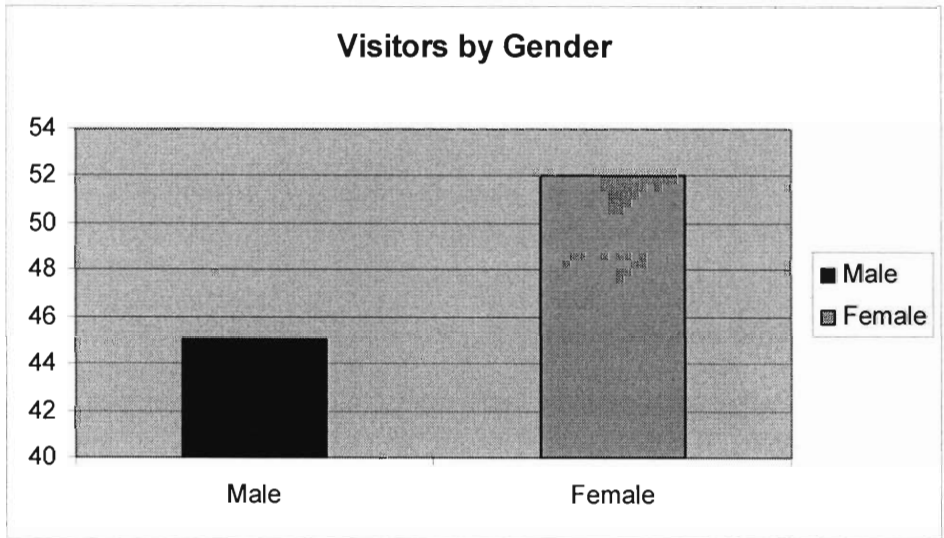
## **Appendix H: Interview Protocol**

1. How old are you?
2. Did you like “The Knight is Young”?
3. What do you think about how kids used armour and weapons?
4. Based on what you have learned, who wore skirts in medieval times?
5. What did you like the best in “The Knight is Young”?
6. What is one thing you didn’t like in “The Knight is Young”?

Did you like the Playmobil Room?



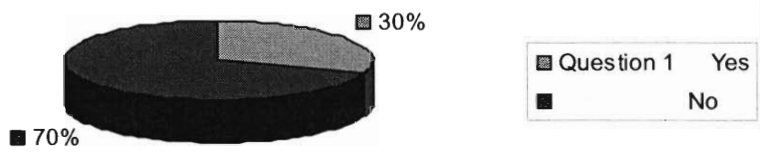
**Appendix I: Playmobil Survey Results**



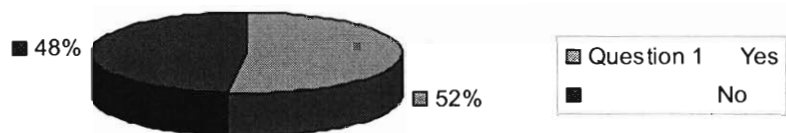
### Overall Question 1



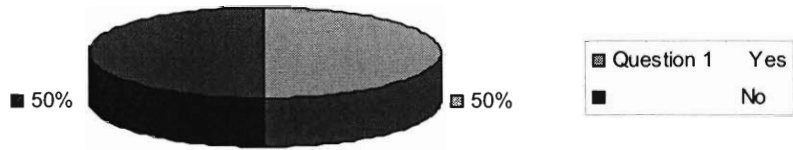
### Question 1 (Male Overall)



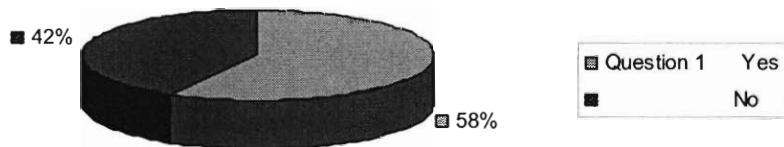
### Question 1 (Female Overall)



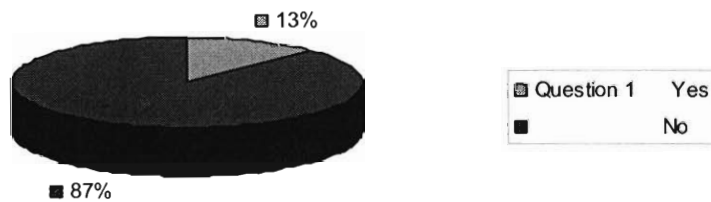
Question 1 (Male <20)

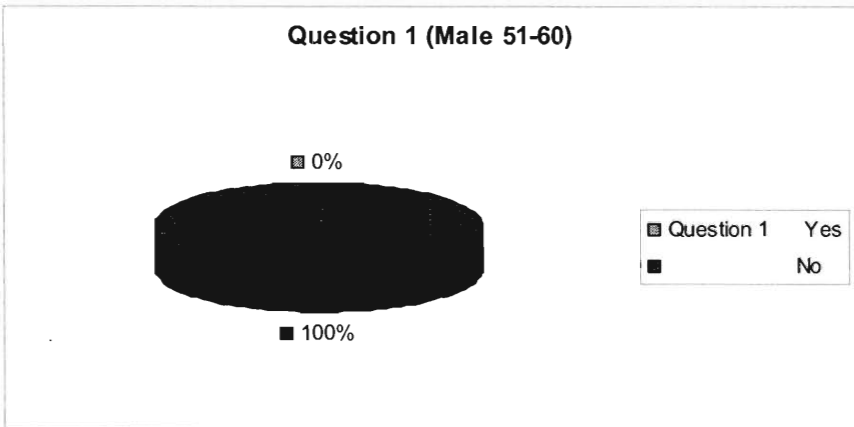
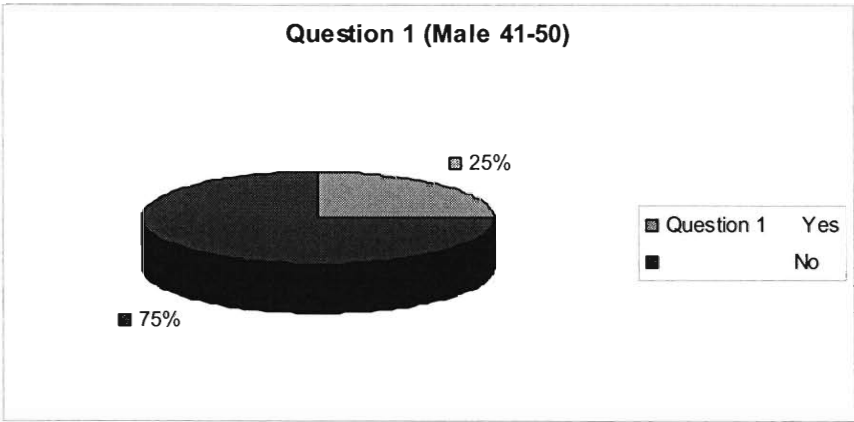


Question 1 (Male 21-30)



Question 1 (Male 31-40)

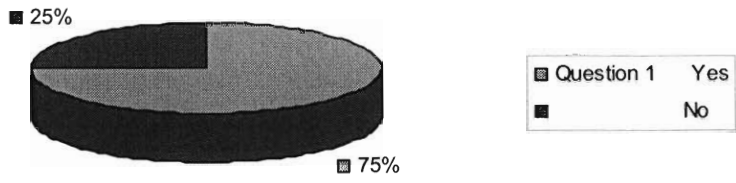




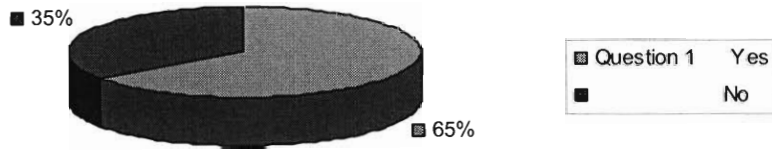
No graph for *Question 1 (Male 61-70)*

No graph for *Question 1 (Male >71)*

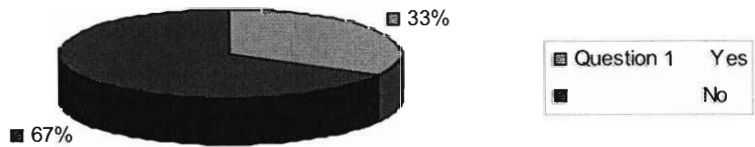
**Question 1 (Female <20)**



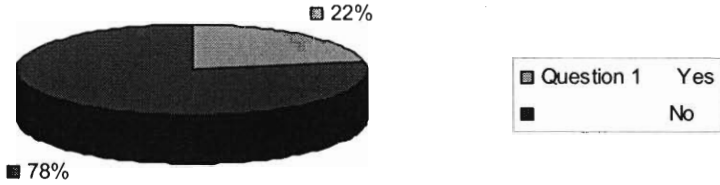
**Question 1 (Female 21-30)**



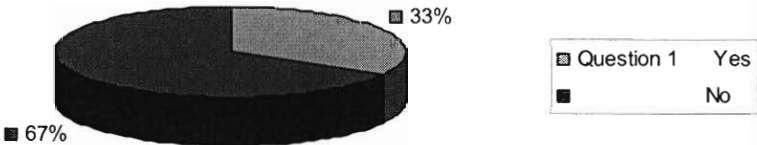
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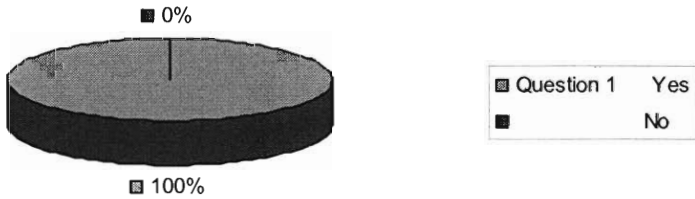
Question 1 (Female 41-50)



Question 1 (Female 51-60)

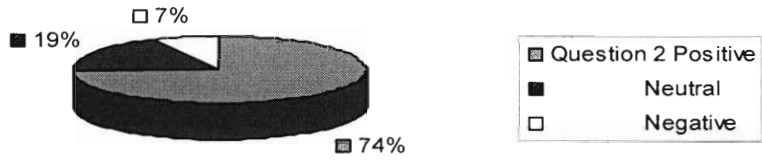


Question 1 (Female 61-70)

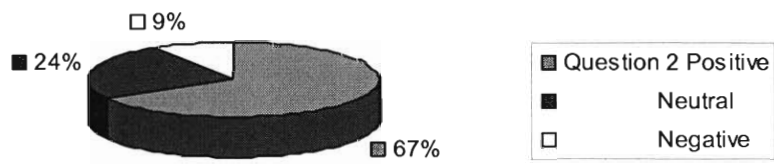


No Graph for *Question 1 (Female >71)*

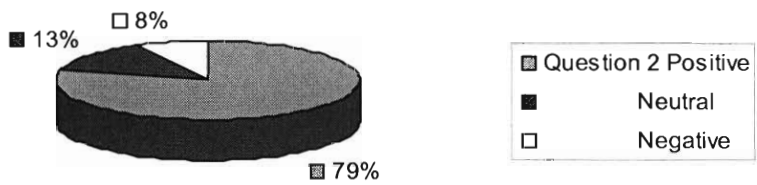
### Overall Question 2



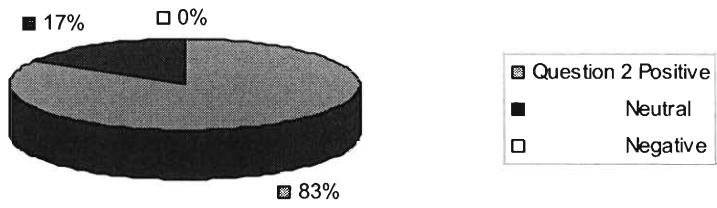
### Question 2 (Male Overall)



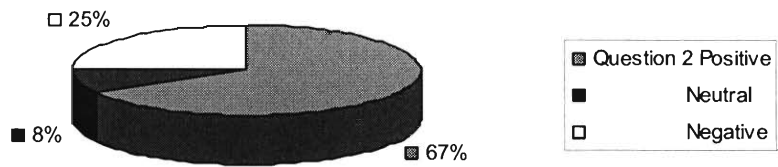
### Question 2 (Overall Female)



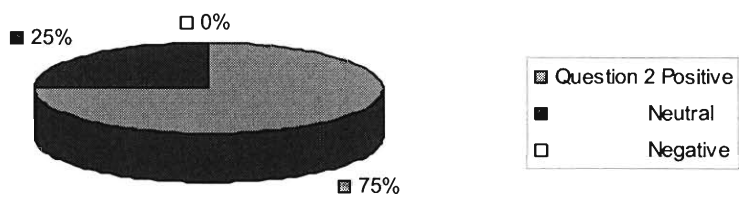
**Question 2 (Male <20)**



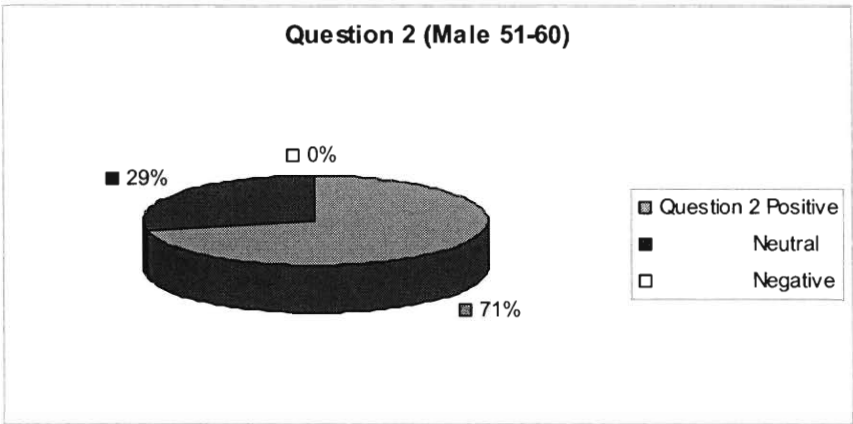
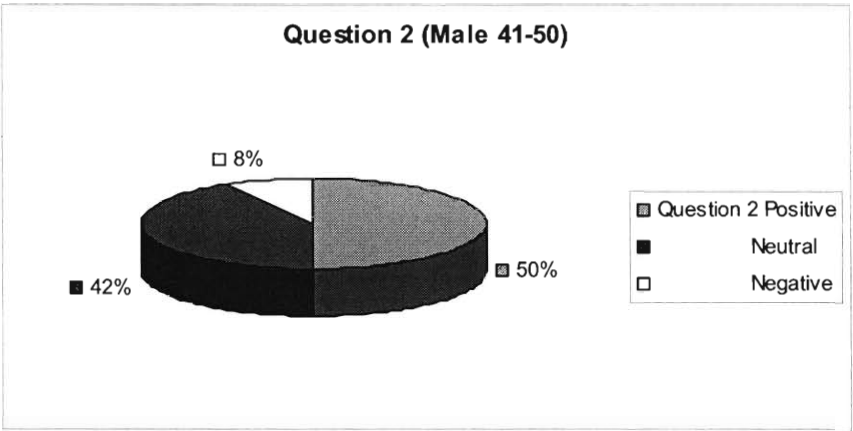
**Question 2 (Male 21-30)**



**Question 2 (Male 31-40)**



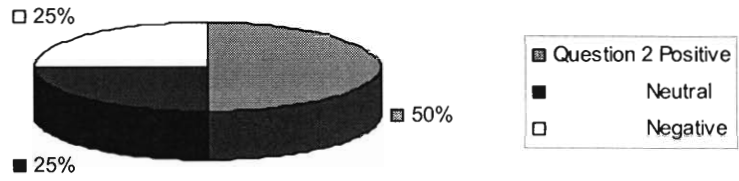




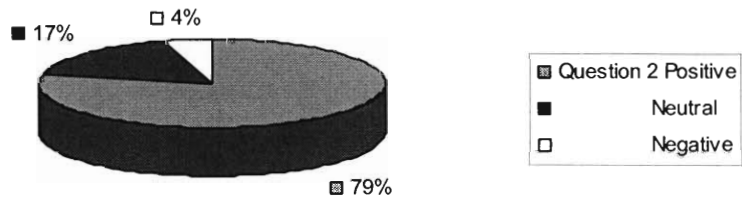
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No graph for *Question 2 (Male >71)*

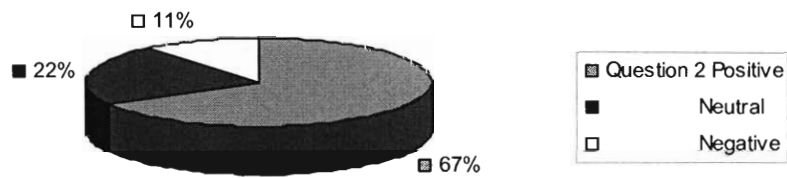
**Question 2 (Female >20)**

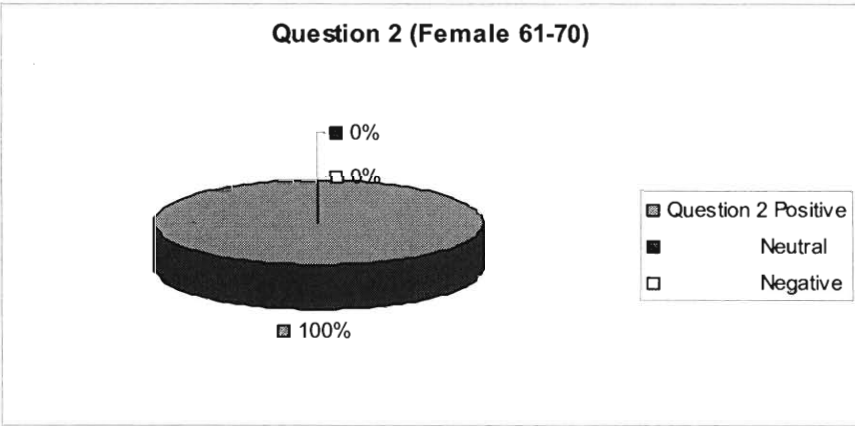
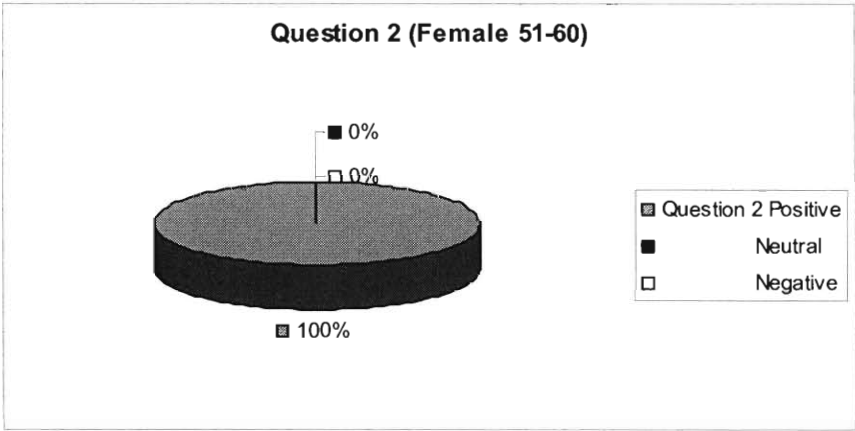
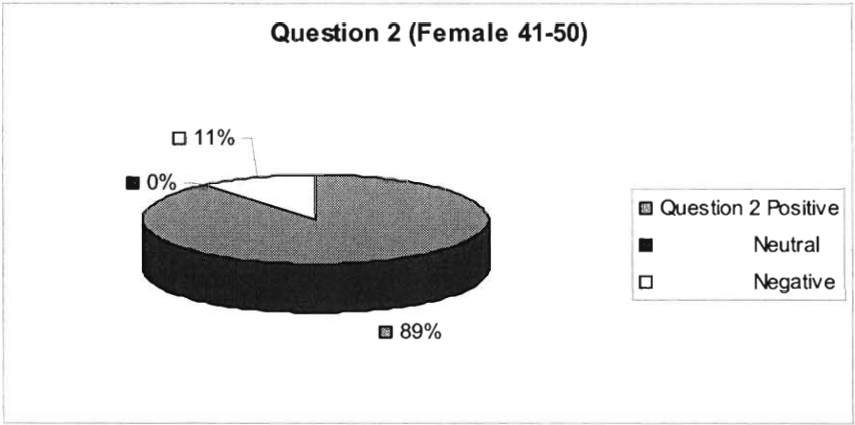


**Question 2 (Female 21-30)**



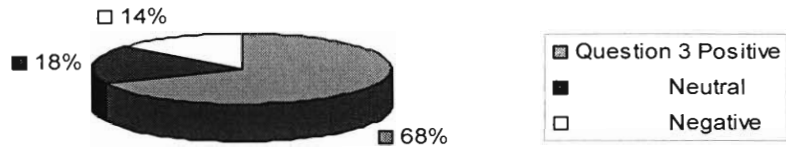
**Question 2 (Female 31-40)**



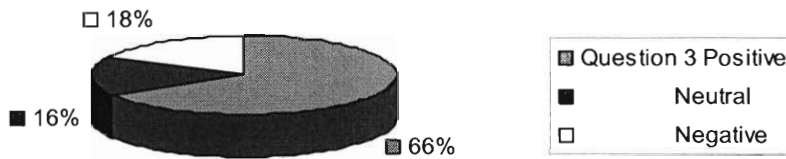


No graph for *Question 2 (Female >71)*

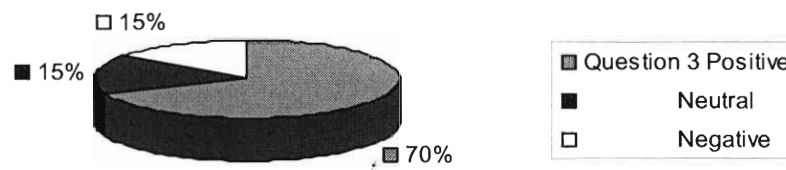
### Overall Question 3



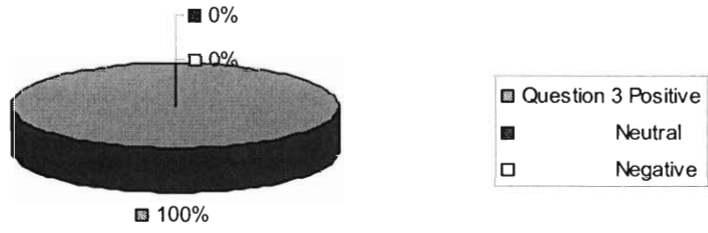
### Question 3 (Male Overall)



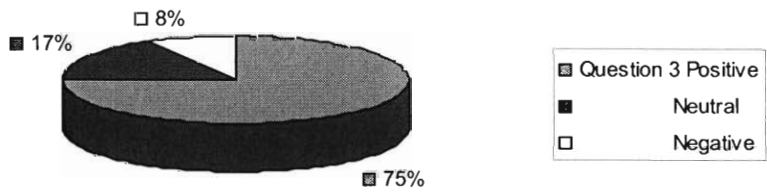
### Question 3 (Female Overall)



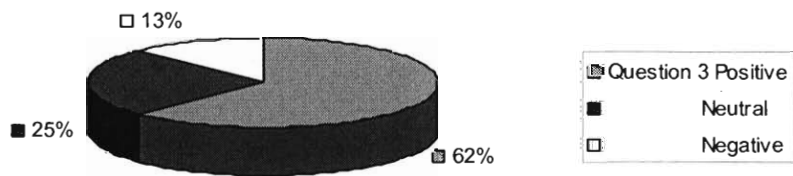
**Question 3 (Male <20)**

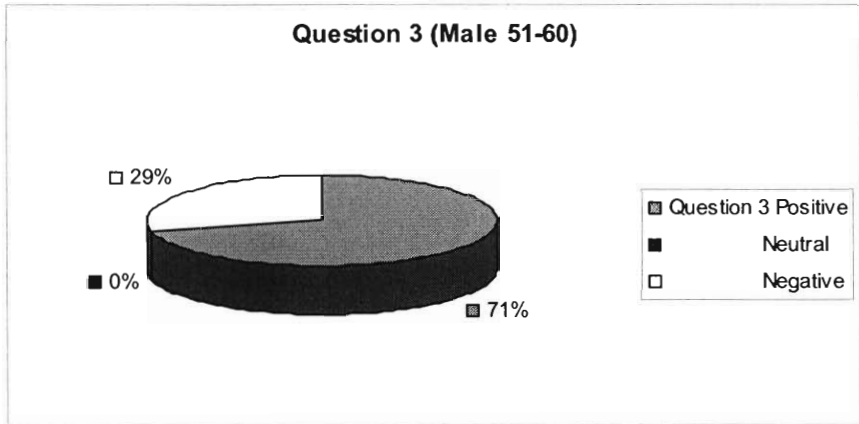
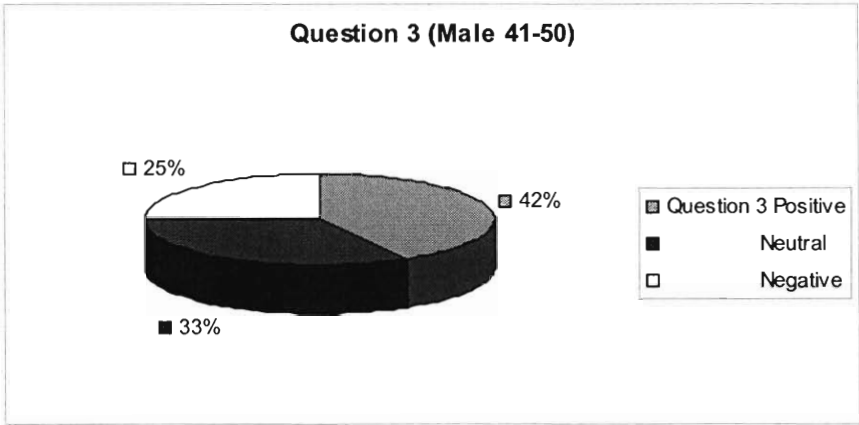


**Question 3 (Male 21-30)**



**Question 3 (Male 31-40)**

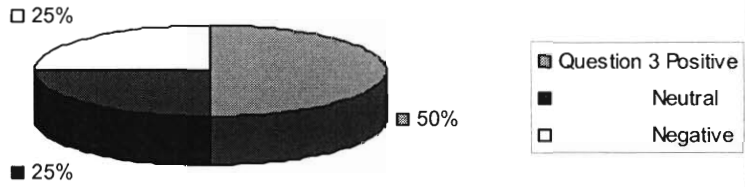




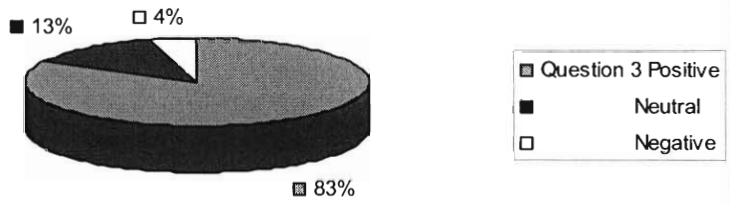
No graph for *Question 3 (Male 61-70)*

No graph for *Question 3 (Male >71)*

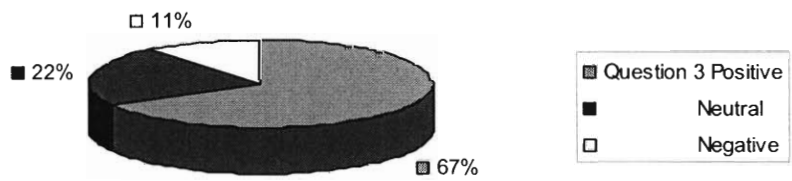
**Question 3 (Female <20)**



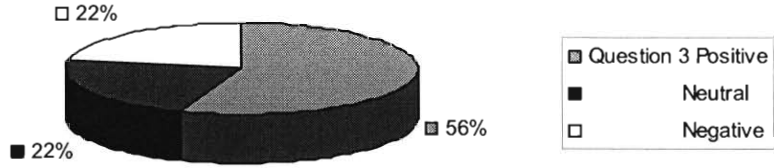
**Question 3 (Female 21-30)**



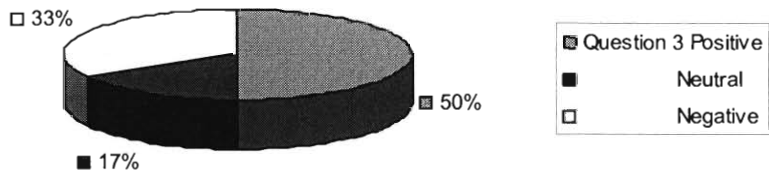
**Question 3 (Female 31-40)**



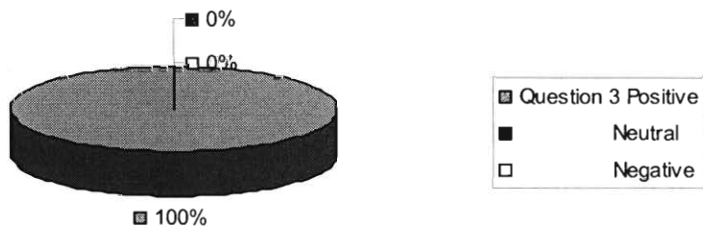
**Question 3 (Female 41-50)**



**Question 3 (Female 51-60)**



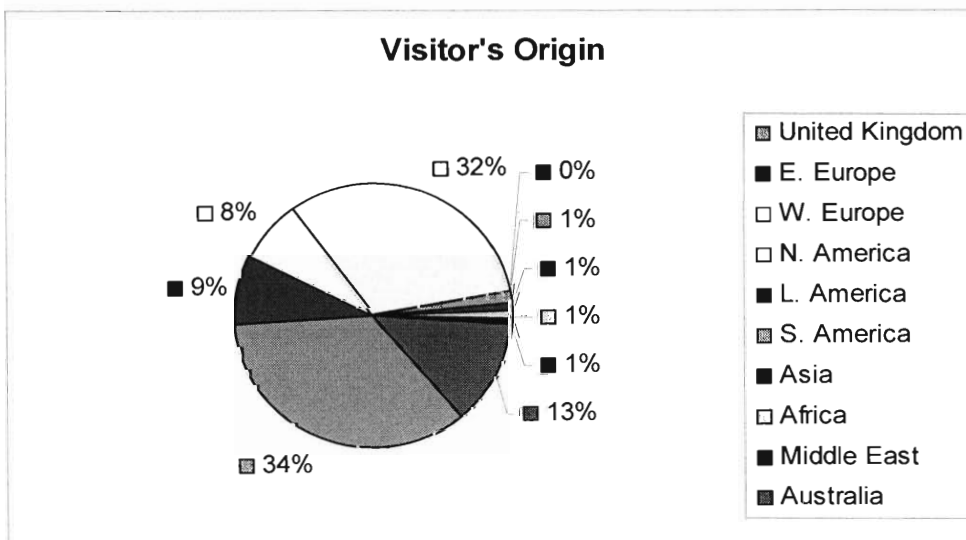
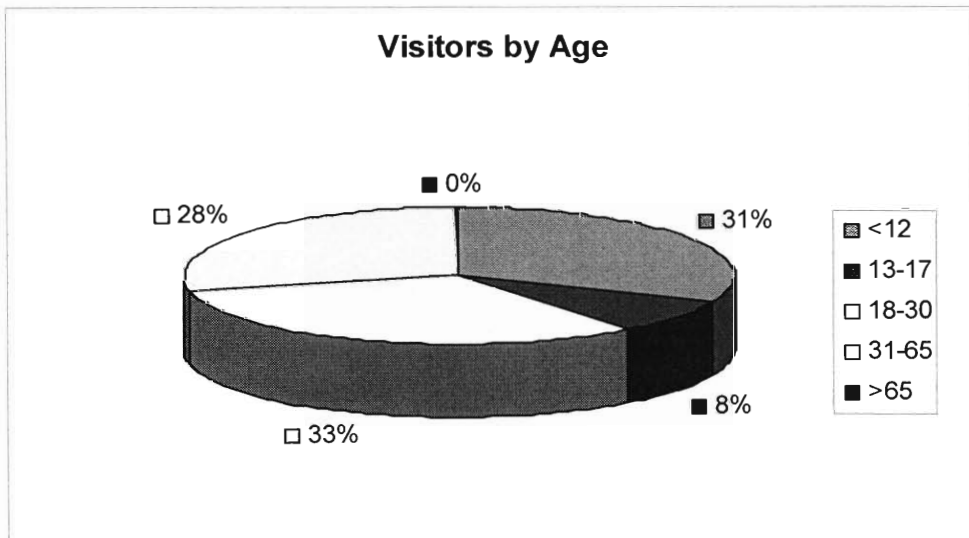
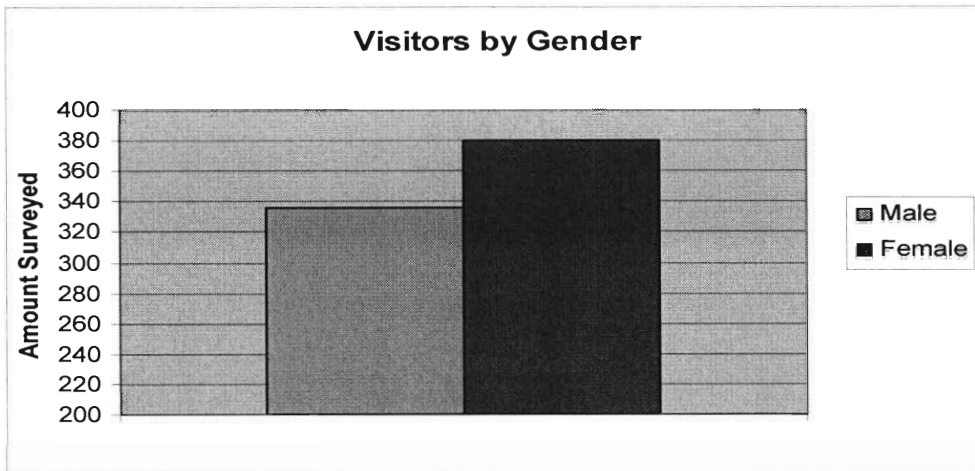
**Question 3 (Female 61-70)**



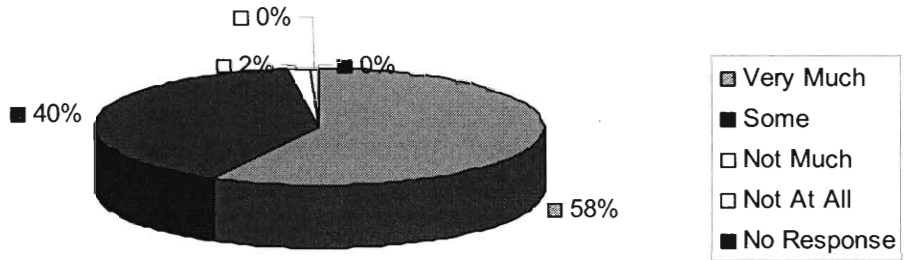
No graph for *Question 2 (Female >71)*



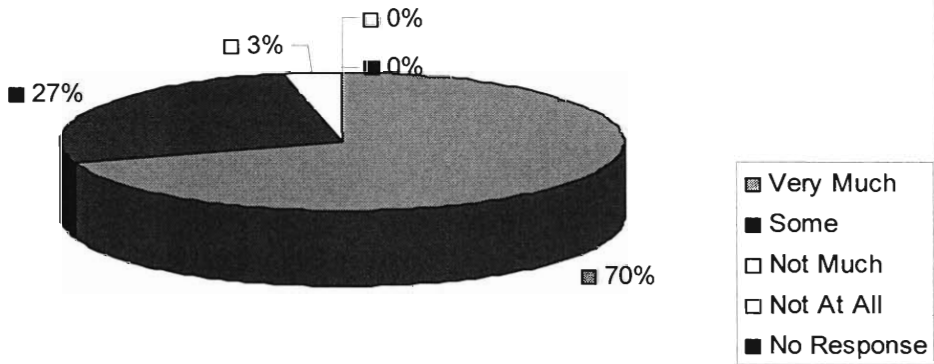
**Appendix J: General/Children Survey Results**



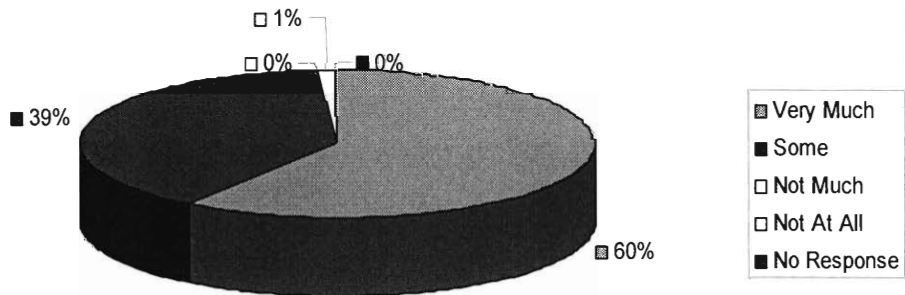
**Question 1 Responses (Overall)**



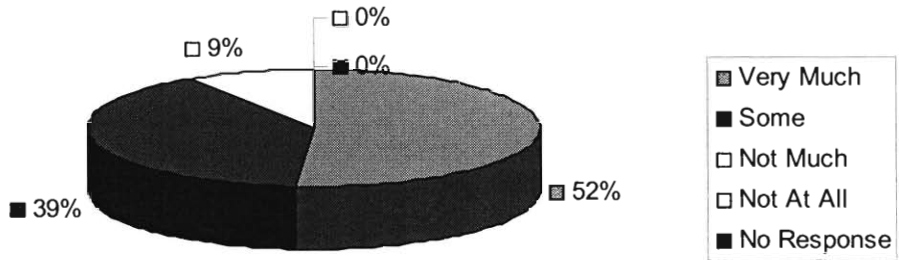
**Question 1 (Male <12)**



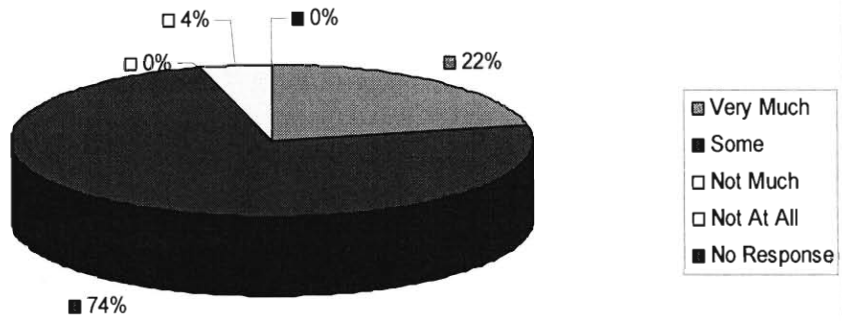
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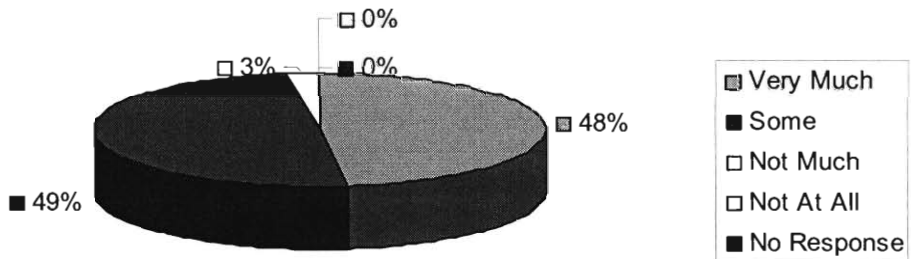
**Question 1 (Male 13-17)**



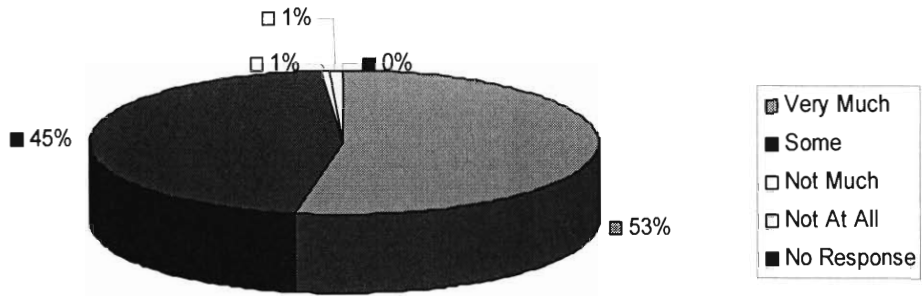
**Question 1 (Female 13-17)**



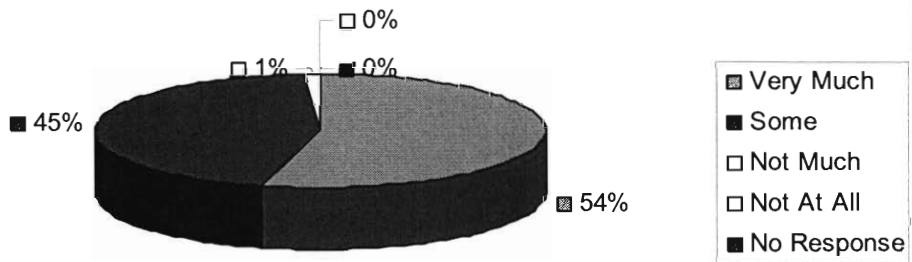
**Question 1 (Male 18-30)**



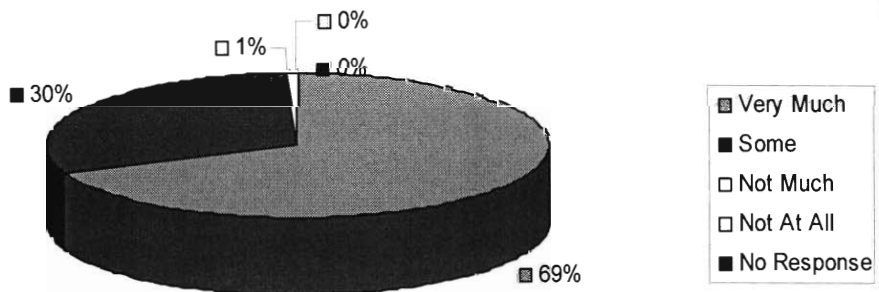
**Question 1 (Female 18-30)**



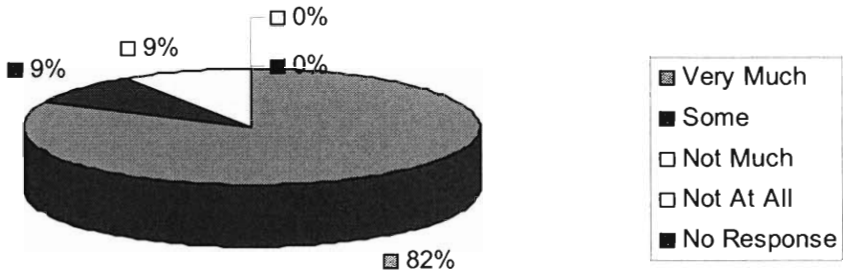
**Question 1 (Male 31-65)**



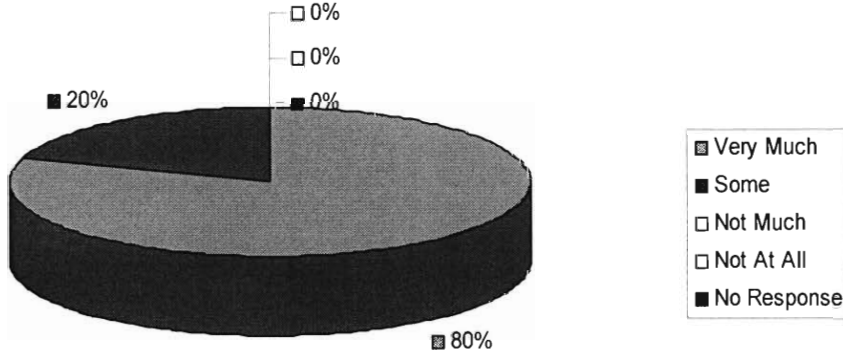
**Question 1 (Female 31-65)**



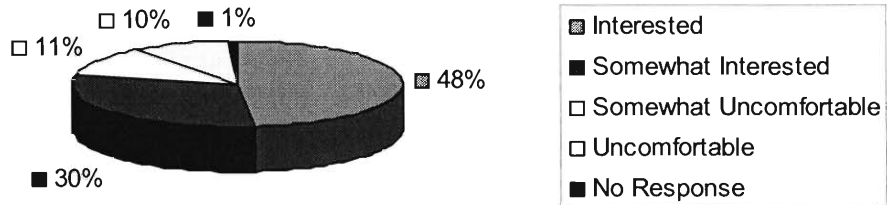
**Question 1 (Male >65)**



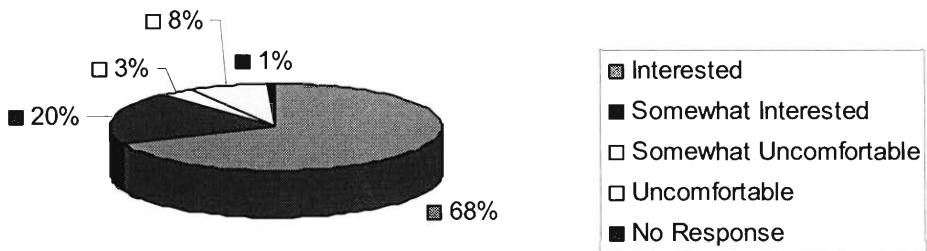
**Question 1 (Female >65)**



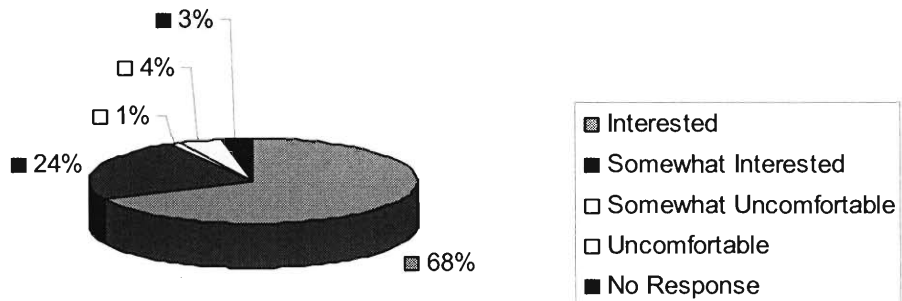
### Question 2 Responses (Overall)



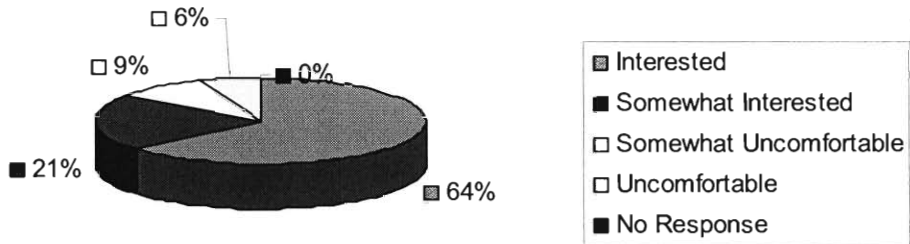
### Question 2 (Male <12)



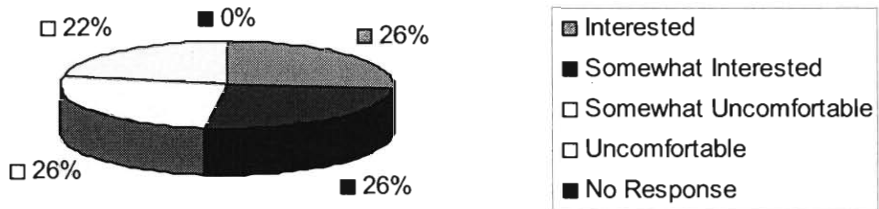
### Question 2 (Female <12)



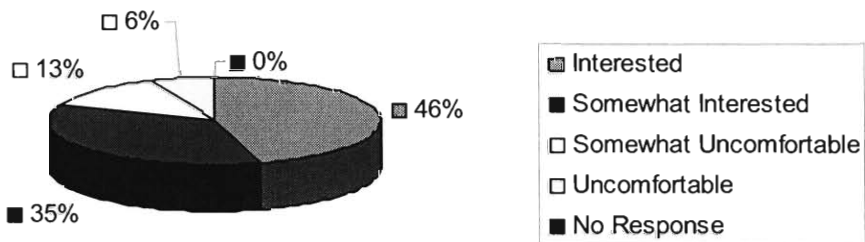
### Question 2 (Male 13-17)



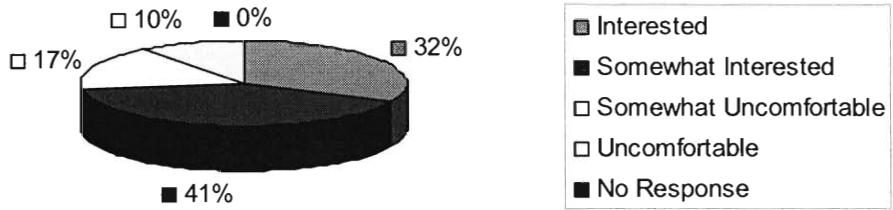
### Question 2 (Female 13-17)



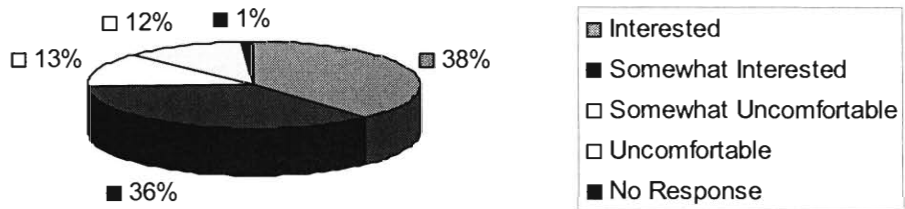
### Question 2 (Male 18-30)



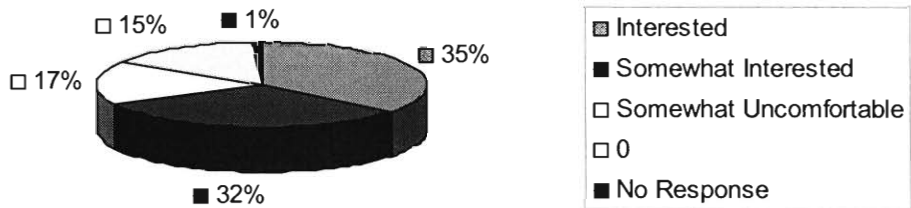
### Question 2 (Female 18-30)



### Question 2 (Male 31-65)

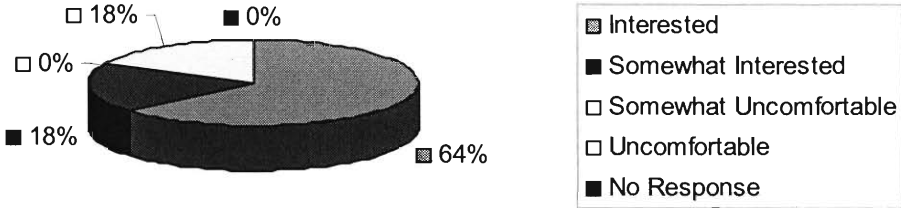


### Question 2 (Female 31-65)

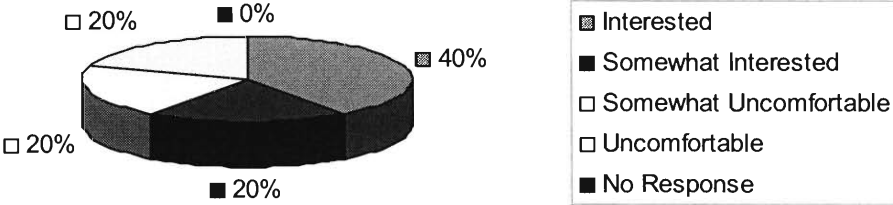




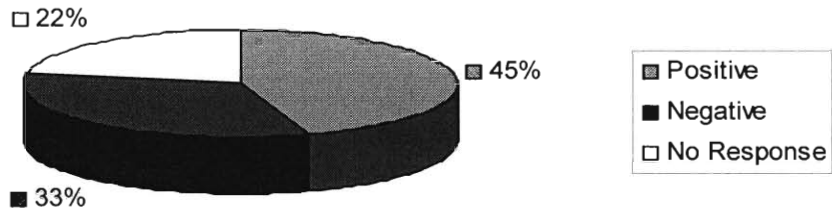
**Question 2 (Male >65)**



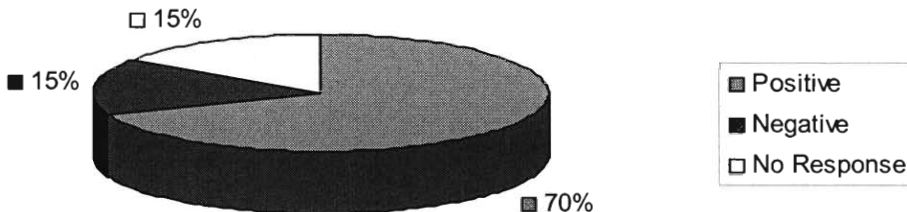
**Question 2 (Female >65)**



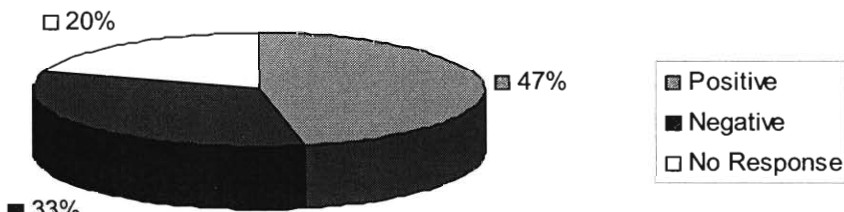
### Question 3 Responses (Overall)



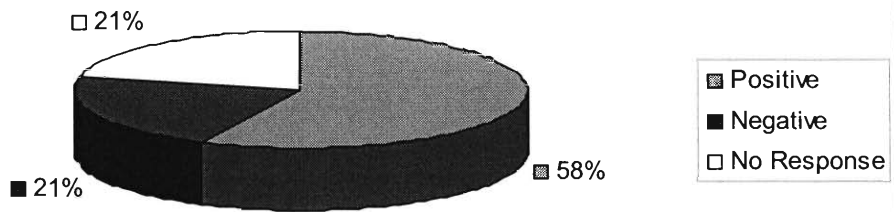
### Question 3 (Male <12)



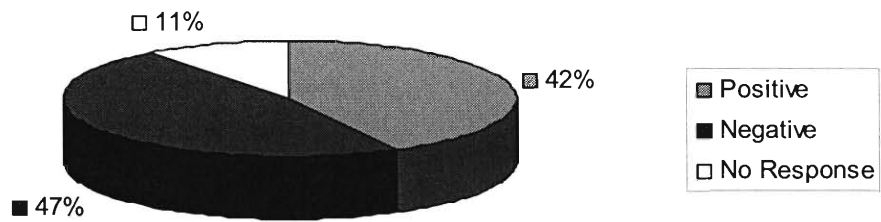
### Question 3 (Female <12)



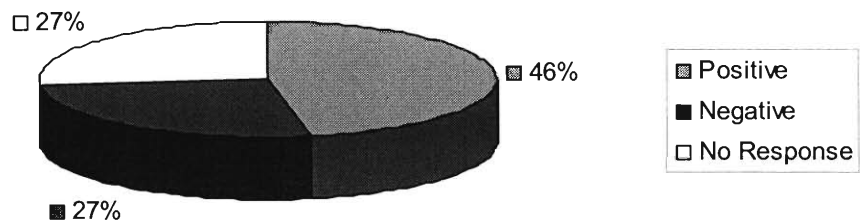
### Question 3 (Male 13-17)



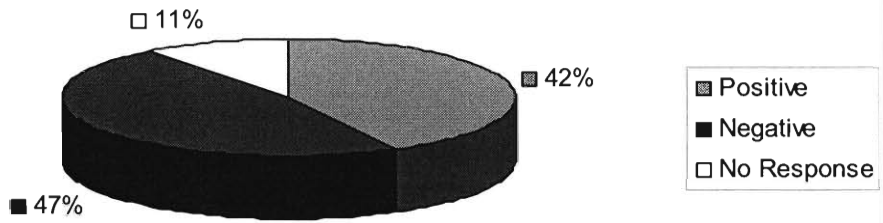
### Question 3 (Female 13-17)



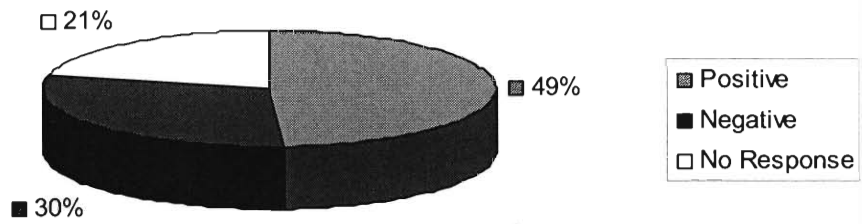
### Question 3 (Male 18-30)



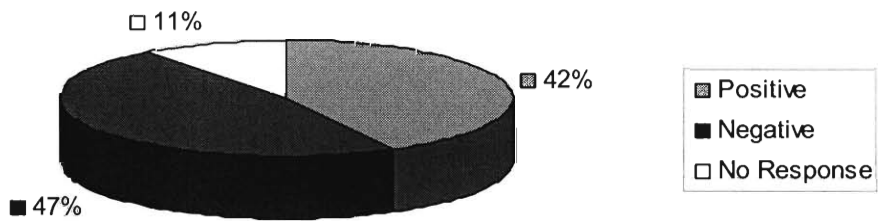
**Question 3 (Female 13-17)**



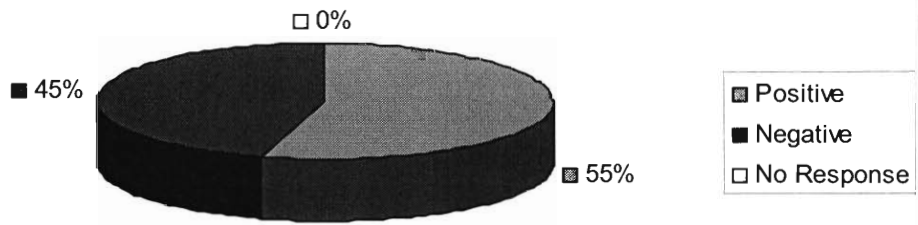
**Question 3 (Male 31-65)**



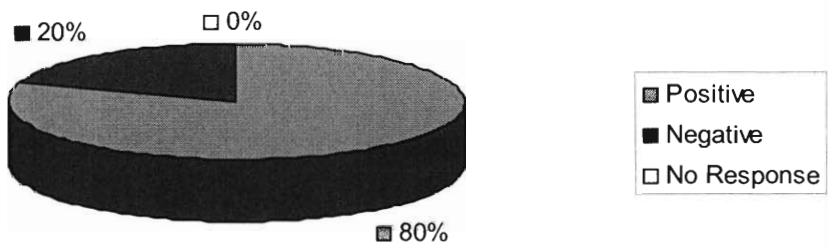
**Question 3 (Female 13-17)**



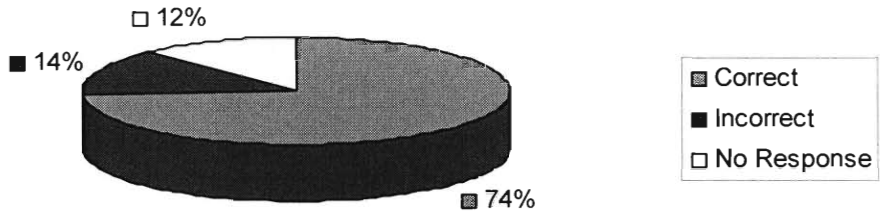
**Question 3 (Male >65)**



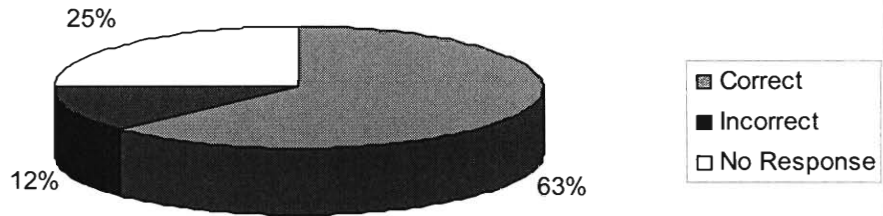
**Question 3 (Female >65)**



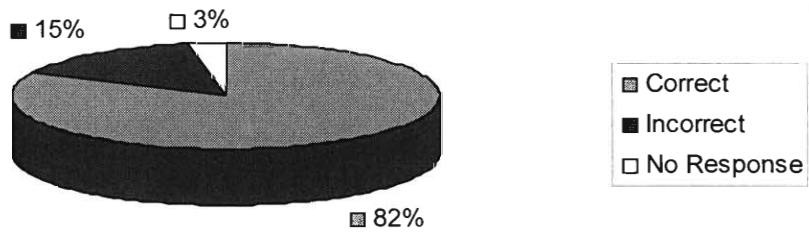
**Question 4 Responses (Overall)**



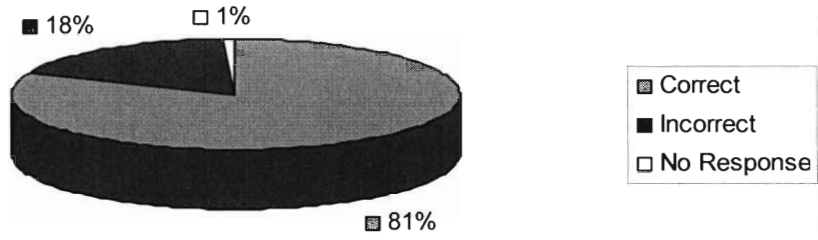
**Question 4A (Overall)**



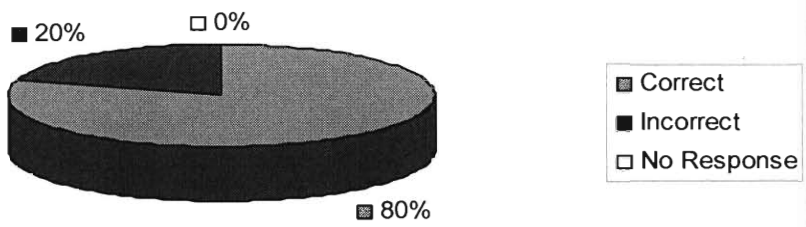
**Question 4B (Overall)**



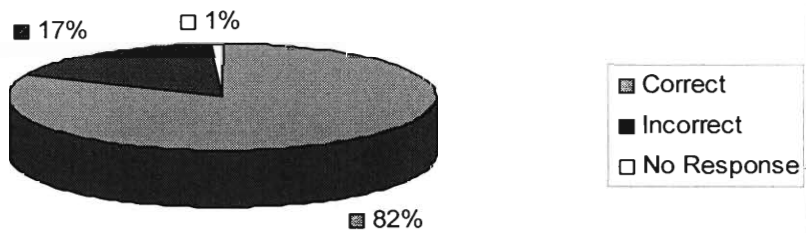
### Question 4 (Male <12)



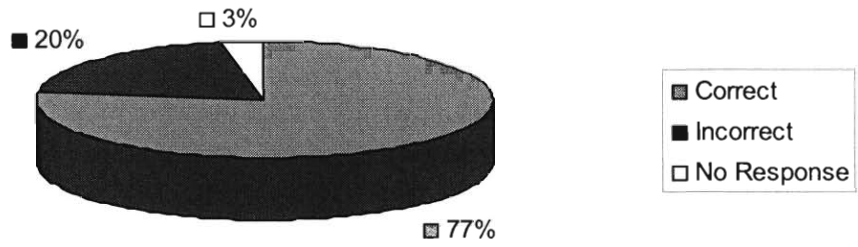
### Question 4A (Male <12)



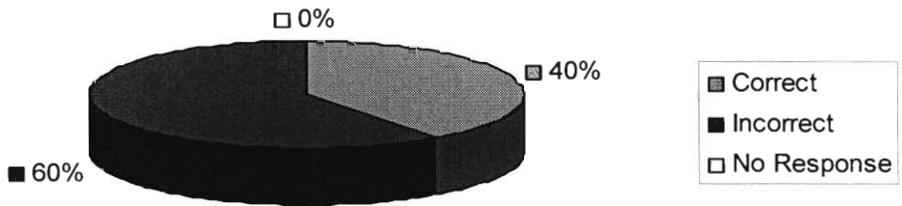
### Question 4B (Male <12)



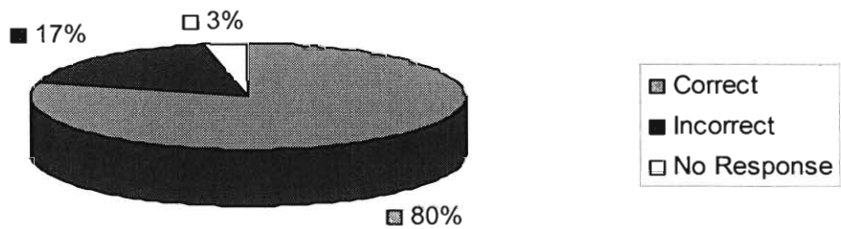
### Question 4 (Female <12)



### Question 4A (Female <12)

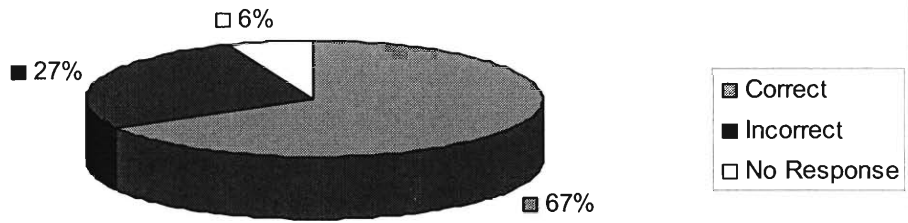


### Question 4B (Female <12)

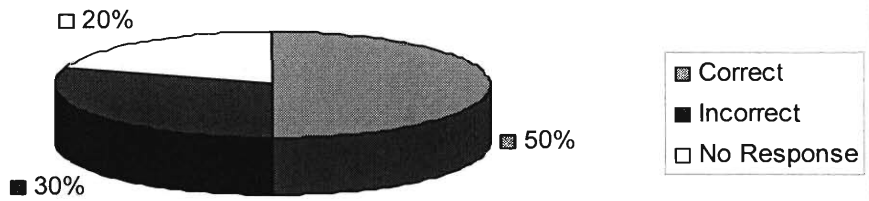




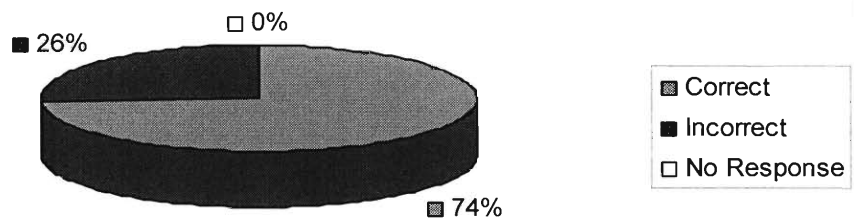
### Question 4 (Male 13-17)



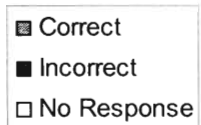
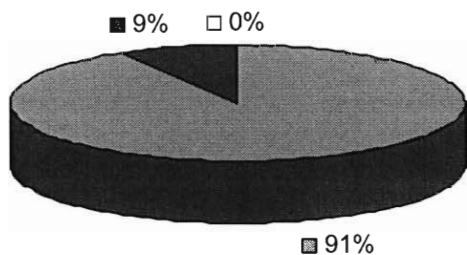
### Question 4A (Male 13-17)



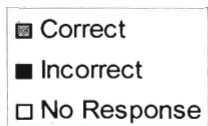
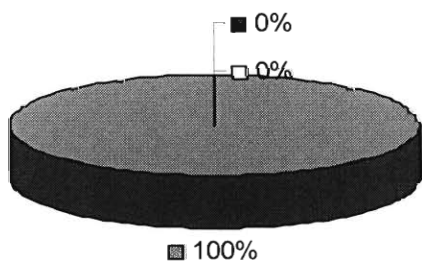
### Question 4B (Male 13-17)



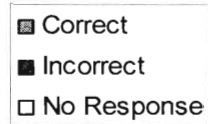
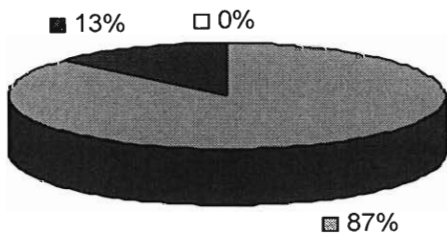
### Question 4 (Female 13-17)



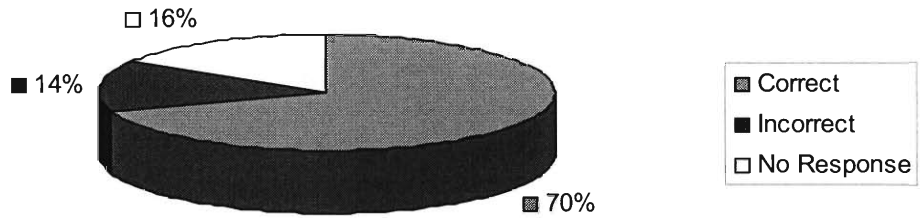
### Question 4A (Female 13-17)



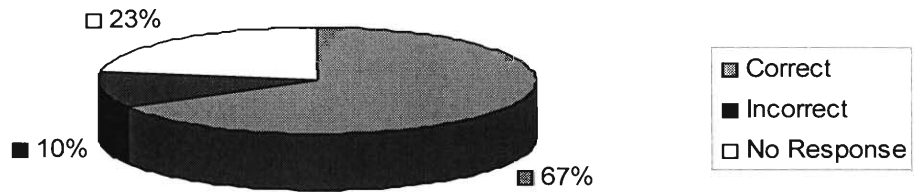
### Question 4B (Female 13-17)



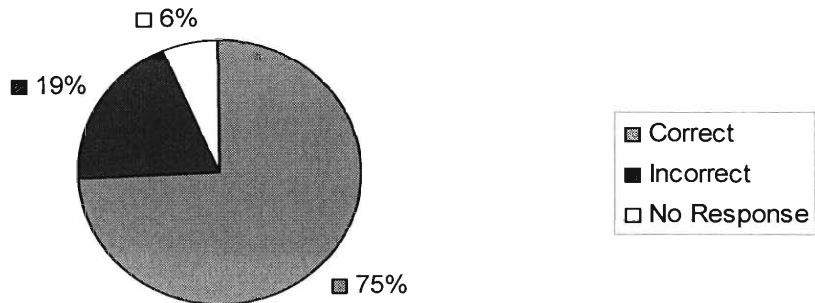
### Question 4 (Male 18-30)



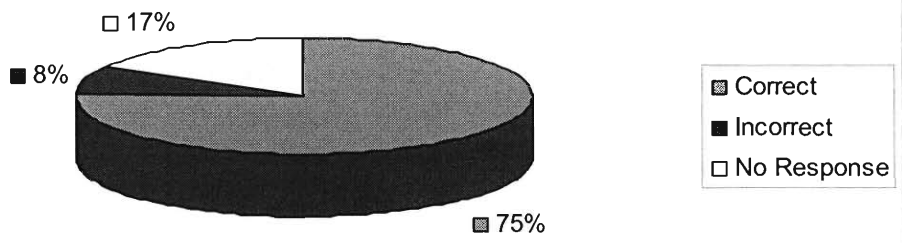
### Question 4A (Male 18-30)



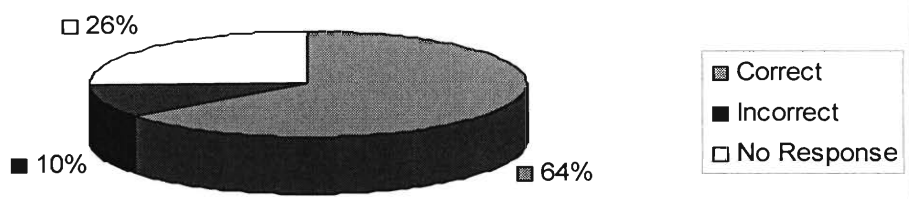
### Question 4B (Male 18-30)



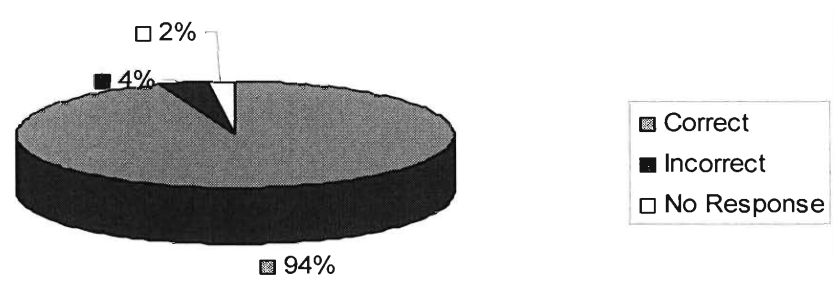
### Question 4 (Female 18-30)



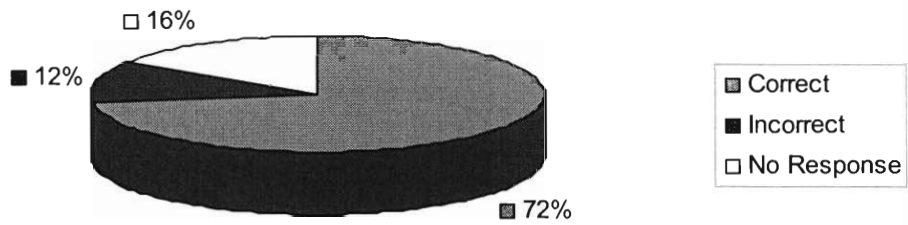
### Question 4A (Female 18-30)



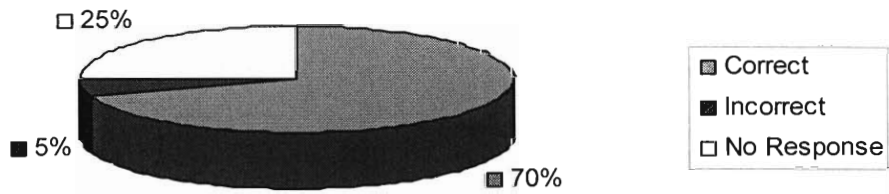
### Question 4B (Female 18-30)



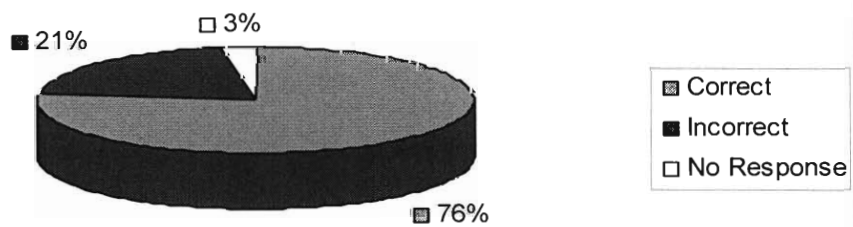
### Question 4 (Male 31-65)



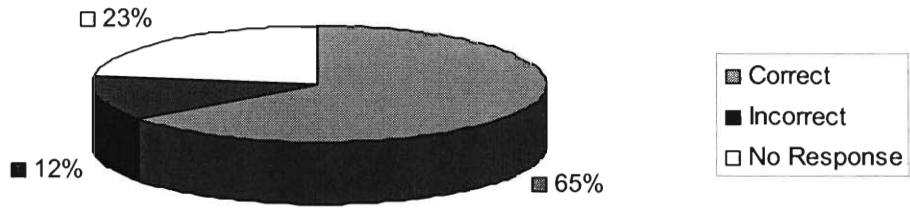
### Question 4A (Male 31-65)



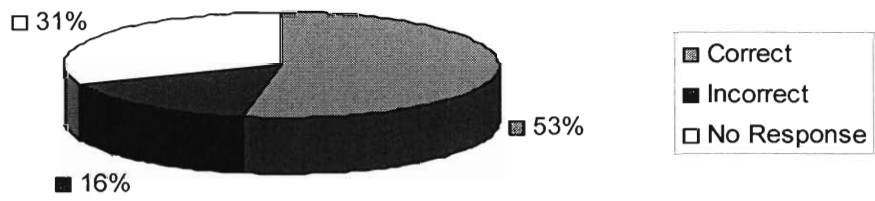
### Question 4B (Male 31-65)



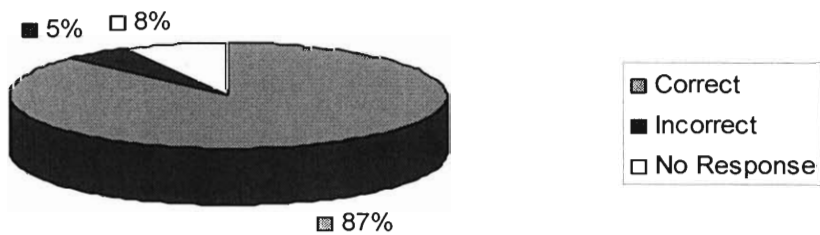
### Question 4 (Female 31-65)



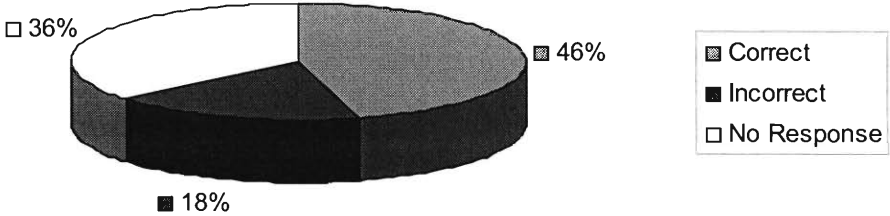
### Question 4A (Female 31-65)



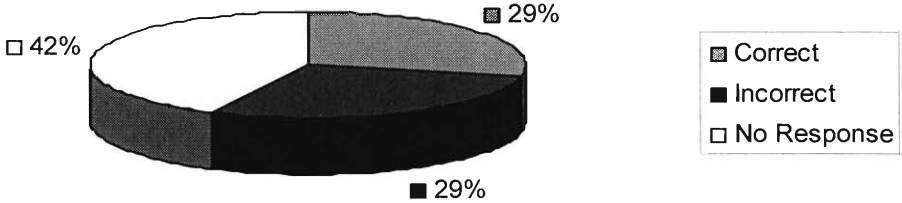
### Question 4B (Female 31-65)



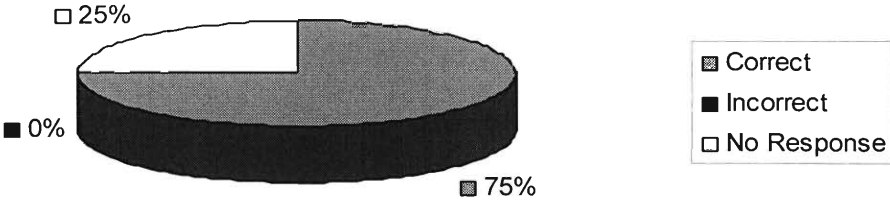
**Question 4 (Male >65)**



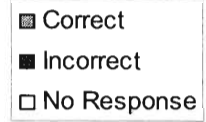
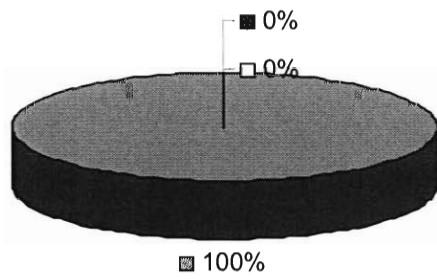
**Question 4A (Male >65)**



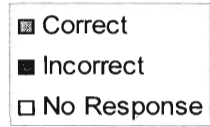
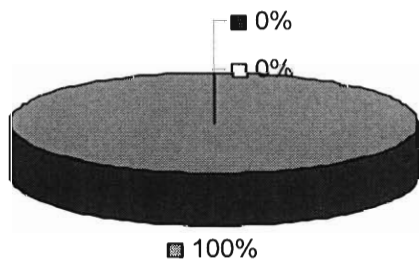
**Question 4B (Male >65)**



### Question 4 (Female >65)



### Question 4A (Female >65)



### Question 4B (Female >65)

