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# **CROWDSOURCING DESCRIPTIONS OF VISUAL WORKS OF ART FOR BLIND AND PARTIALLY SIGHTED PEOPLE**

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Submitted as part fulfilment of MSc in Human-  
Computer Interactive Technologies

Department of Computer Science

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September 2023

**Supervised by Professor Helen Petrie**

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## Abstract

Access to art is very important to many blind and partially sighted people and they want to learn about aspects of art the same as that of sighted people. Some museums and art galleries provide audio guides and tours for blind and partially sighted visitors, but images of artworks on their website are generally not accessible. This project explored the possibility of crowdsourcing descriptions of artworks for blind and partially sighted people. An existing set of guidelines was revised and then in Study 1, was evaluated by 18 people working in the art world and 10 blind and partially sighted people using a Delphi method. The guidelines were then extensively revised. In Study 2, a crowdsourcing study, 23 members of the public interested in art created three descriptions of works of art using the new set of guidelines and provided feedback about the guidelines and their experience. Finally in Study 3, the 10 blind and partially sighted participants from Study 1 were asked to evaluate three descriptions of the artworks. The results showed that the refined set of guidelines were moderately easy to understand, moderately well organised and moderately detailed and the examples were very useful in creating descriptions for artworks for blind and partially sighted people. The results also showed that the participants felt very confident in creating descriptions with the help of the guidelines. Interestingly, whether or not participants had prior experience with people who are blind or partially sighted had no impact on the quality of their descriptions.

Keywords: Guidelines; Blind and partially sighted people; Visual arts; Descriptions; Delphi method.



## 1 INTRODUCTION

Across the globe, billions of people contend with various disabilities. Among them, approximately 2.2 billion people experience vision impairments<sup>1</sup>, comprising 36 million that are legally blind and 217 million with substantial visual impairment [4]. In the United Kingdom, where this project took place, 2 million people are living with substantial sight loss [5]. Since most art is experienced visually, this poses a barrier for the population with sight loss. People who have never seen may also want to experience this aspect of the world that is obviously very important and they may want to learn about aspects such as colour, perspective and style that sighted people experience in artworks. Blind and partially sighted people are often very interested in art, for many reasons. Many people have lost their sight or it is deteriorating and they still want to enjoy art. To provide access to art, significant progress has been made in enhancing accessibility for people who are blind or partially sighted within museums. This progress can be attributed to the efforts of the civil rights movement and the implementation of the Equality Act of 2010 [6]. Despite that, many blind and partially sighted people experience a feeling of alienation from museums, perceiving a lack of opportunities for engagement and community involvement. For example, McGinnis [7] commented that “access means not only physical access, but conceptual, intellectual and multi-sensory access as well”.

Although art museums are increasingly recognizing the importance of embracing and accommodating blind and partially sighted people within their spaces, images featured on museum websites usually contain basic and minimal descriptions of the artwork that should be made more detailed and interesting. It is important to create image descriptions on museum websites to cater to the needs of blind and partially sighted visitors. Museums and art galleries typically have few funds and time to create descriptions of all the works of art they hold, thus, this research investigates how volunteers who are interested in art can help create appropriate descriptions online. These descriptions might be available when people access the museum or art gallery website, in audio guides or catalogues.

This raises the fundamental question of what aspects of the artwork should be included in image descriptions and which types of descriptions are useful for blind and partially sighted people. Therefore, the development of a set of guidelines that can offer effective guidance is an important factor in supporting volunteers in creating useful descriptions. The goal of this research project is to establish a set of guidelines for describing artworks for blind and partially sighted people. This will be achieved by creating an initial set of guidelines, having a range of relevant actors review them, then undertaking an initial trial of using the guidelines in a crowdsourcing situation and asking blind and partially sighted people evaluate some of the resulting descriptions.

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<sup>1</sup> For definitions of visual impairment, blindness and partial sight, see section 2.1.

## 1.1 Project Aim and Objectives

The objective of this project is to develop a set of guidelines for describing artworks, mainly paintings, intended for blind and partially sighted people. To attain this aim, the following research questions are focused:

**RQ1:** Can the current guidelines be improved by asking a range of relevant stakeholders (e.g., people working in the art world, blind and partially sighted people) to review them?

**RQ2:** How usable are the resulting guidelines to interested members of the public in creating descriptions of works of art?

**RQ3:** Do blind and partially sighted people find the resulting descriptions interesting and useful?

To answer the research questions and develop a set of guidelines, three studies have been conducted in this project and these are briefly introduced in the next section.

## 1.2 Project Outline

In this research, revision of the guidelines that were initially developed in the previous year's MSc HCIT study (Bai, 2022) served as the part of the preliminary work [2]. A range of new material was also reviewed (see section 3.3, below) and a new version of the guidelines developed. A questionnaire was used to elicit feedback from people working in the art world and blind and partially sighted people about the guidelines. In study I, the guidelines were revised in light of, incorporating the findings from last year's study. In Study II, these guidelines were assessed by experts, and a revised version of the guidelines was formulated. For Study III, a user study was conducted with the members of the general public where participants were asked to create descriptions based on the revised guidelines and then, the guidelines were refined by analysing the descriptions collected in this study. These descriptions were then incorporated in a questionnaire which was shared with the same "interested public" from Study I, aiming to evaluate the quality of the descriptions and gather additional perspectives on the content blind people would find valuable in image descriptions.

## 1.3 Outline of the Project

Chapter 2 presents the review of previous research and literature. It presents information about the existing guidelines for creating descriptions for online images for blind and partially sighted people, as well as a review of the literature on creating descriptions for artworks.

Chapter 3 presents Preliminary work for this project, the development of the new set of guidelines, based on the previous MSc HCIT project and other relevant information. The new set of guidelines include eight guidelines, each outlining important aspects to describe a work of art and offering specific descriptive methods along with useful examples.

Chapter 4 presents Study 1, the evaluation of the new set of guidelines which was undertaken using a Delphi method approach, an online questionnaire which was answered by 18 people working in the art world and 10 blind and partially sighted people to gather insights on the appropriateness of the guidelines. Following the Delphi study, a refined set of guidelines was created, incorporating the findings from this study.

Chapter 5 presents Study 2, a user study of which was conducted with 23 members of the general public where they were asked to create descriptions based on the refined set of guidelines. This study provides knowledge on practical implementation of the guidelines in creating descriptions of artwork images for blind and partially sighted people.

Chapter 6 presents Study 3, blind and partially sighted people were asked to evaluate some of the resulting descriptions from Study 2. This study evaluates the quality of the descriptions and gathers additional perspectives on the content blind people would find valuable in image descriptions.

Chapter 7 provides the discussion and conclusions of the research conducted in the project. It discusses the project's limitations, proposes future works, and provides conclusions based on the findings from these three studies.

## **1.4 Statement of Ethics**

This project has complied with the following principles of ethics:

*Do no harm:* None of the participants have been exposed to physical risks or tasked with anything harmful, illegal or against their interests. In the first study, both blind and partially sighted participants and sighted participants shared their opinions and provided feedback on a set of guidelines and descriptions of artworks. In the second study, a further group of sighted participants created descriptions of works of art using those guidelines and gave feedback about their experience of using the guidelines. Finally, in the third study, the blind and partially sighted participants from the first study evaluated some of the descriptions created.

*Informed consent:* All the participants in the project received information in advance regarding the study's objectives, expected tasks, potential outcomes, and the conditions of their participation, including the level of reward, where appropriate. They gave their explicit consent to these terms before commencing their participation and had the option to withdraw from the study at any point. In the case of the participants recruited through Prolific (sighted participants in the first and second studies) provided participants with information about the study and provided the reward.

*Anonymity and Confidentiality of data:* All data gathered during the project is treated with utmost confidentiality. All project data is securely stored, with access restricted to only the author and the supervisor of this project. If used publicly, it will be only presented in a completely anonymous form.

## CHAPTER 2. LITERATURE REVIEW

This chapter provides an overview of the background of the research topic and reviews relevant literature. The overview begins with a discussion on how blind people access computers and the internet section 2.1. Then, current methods for describing general images to blind people is covered in section 2.2. Lastly, section 2.3 explores the access to art to blind people.

### 2.1 Definitions and Statistics on Visual Impairment

In the United Kingdom, a person can be certified as “blind” (now officially termed ‘severely sight impaired’) if they are ‘so blind as to be unable to perform any work for which eye sight is essential’ or unable to see at 3 metres what a normally sighted can see at 60 metres [8]. This certification is determined based on the individual's ability to perform any job that requires eyesight, rather than being restricted to a specific occupation. The Department of Health also states that people are more likely to be categorised as blind if their vision loss is recent or if they are older individuals, as both of these groups are seen as less capable of adapting to their loss of vision [9]. Being classified as “partially sighted” (now officially termed 'sight impaired') means that an individual can 'see at 3 metres but not at 6 metres what a normally sighted person can see at 60 metres [8].

In the United Kingdom, the Royal National Institute of Blind People (RNIB) states that over two million people, accounting for 3.3% of the entire population, are currently living with sight loss [5]. Nonetheless, this includes the population with a corrected vision with the help of prescription eyeglasses or contact lenses. There are approximately 340,000 people officially registered as either blind or partially sighted [5]. However, it is important to note that not all people with severe sight issues legally register, making this statistic likely an underestimation of the actual number of people living with sight loss that substantially affect their daily routines. The UK is expected to witness a substantial rise in the count of individuals experiencing sight loss. Projections indicate that by the year 2050, the UK will likely see a twofold increase in the number of people living with sight loss, which is nearly four million people [4][5].

### 2.2 Access to computer technology and the internet by blind and partially sighted people

“Assistive technology” is an umbrella term for software and hardware which enable blind individuals to overcome accessibility obstacles in order to lead active and independent lives [10][11]. To access the internet, visually impaired people rely on assistive technologies such as refreshable electronic Braille displays and screen readers. Screen readers are the most popular assistive technology used by blind and partially sighted users to access computers and the Internet. A screen reader interprets the computer code and reads the content in a synthesised voice. A screen reader also provides an extra layer of functionality so the user can interact with the information non-visually. For example, screen readers provide quick access to a list of the headings on a page, a list of the links, a skip to the next paragraph [12]. The screen reader reads out the alternative text of the images, thereby offering additional information to users who are unable to view the images themselves. Screen readers can

only describe an image with its metadata, in such a case if the alt text is present. It identifies the HTML <IMG> tag and, if alt text is present, it alerts users to the image's existence and proceeds to read the alt text [13]. However, in cases where no alt text is provided, it simply informs the user about the image's existence. If the alt attribute is empty (alt=""), the screen reader does not signal the existence of the image to the user [13]. Screen readers are unable to analyse and read the content by itself within images; they rely on the presence of alternative text. More to this, while sighted users can easily perceive the visual layout of web pages, screen readers cannot convey this information to visually impaired users, nor can they intelligently skip over external elements like advertisements.

Blind people can also use a refreshable Braille display (see Figure 2.1) [14]. A refreshable Braille display, often referred to as a Braille terminal, is an electro-mechanical device designed to present Braille characters using raised, round-tipped pins raised through holes on a flat surface. This technology lets blind and partially sighted people, who cannot rely on a standard computer monitor, to access and read text output [14].



**Figure 2.1 Refreshable Braille Display**

For blind people, accessing printed materials traditionally relies on large print for those with low vision and Braille for those who are blind. However, not all blind and partially sighted people can read Braille or large print, and such materials are not always readily available [15]. Braille is only read by 7% of people who are registered blind or partially sighted [15]. Transforming information into Braille is time-consuming, causing delays in accessing information for blind people [16]. The widespread use of computers and portable devices allows blind and partially sighted users to access information instantly, promoting independent access. Further to this, alternative assistive technology devices for people with visual impairments, like tactile graphics and refreshable tactile displays, are prohibitively expensive [17].

### **2.3 Description of digital images for blind and partially sighted people**

It's evident that images are extensively used across the internet and are a ubiquitous element on almost every webpage. There have been concerns raised by researchers regarding an effective approach for blind and partially sighted people mainly because blind and partially sighted people often experience frustration when descriptions offer inadequate or excessive detail, fail to address their specific visual inquiries, or do not help in comprehending the purpose of the image within its context [18][19]. Due to different preferences of different people and situational factors, it is difficult to find

a single image description that effectively caters to the needs of every user and context. Therefore, a challenge is to author image descriptions. To deal with this, context-aware approaches have been employed to determine the relevant content to include and to determine the appropriate linguistic structure for displaying visual content in sentences [20].

When web developers create HTML code for images, they include an "alt" attribute that offers an alternative text description for the website's images. The primary purpose of this "alt" text is to give textual information about the images, conveying the same content as presented to sighted users [21]. This alternative text can be communicated either through the image's alt attribute or through the content and context surrounding the image on the webpage [22]. Failing to include alternative text for images in the HTML code can have adverse results on search engine optimization and is non-compliant with the Web Content Accessibility Guidelines (WCAG) 2.0 [23]. There have been several approaches aimed at making the image descriptions more accessible. The Diagram Centre offers instructions on determining if images serve a functional or decorative purpose, assessing if surrounding text provides relevant information, and providing descriptions appropriate for different age groups [24]. The length of the description is dependent on subject and grade/age [24]. Additionally, the Diagram Centre emphasises the importance of effective image captions that describe the background, foreground, colour, and directional orientation of objects.

WCAG is one of the guidelines on providing alternative text for images. The WCAG is a collaborative effort led by the World Wide Web Consortium (W3C), engaging people and organisations worldwide to establish web accessibility guidelines that address the global requirements of people, organisations, and governments [25]. The primary objective of the WCAG is to provide guidelines on enhancing web accessibility for people with various disabilities, including visual impairment, deafness, learning disabilities, cognitive limitations, limited mobility, speech disabilities, photosensitivity, and their combinations [26]. It comprises four foundational principles: perceivable, operable, understandable, and robust, with each principle including 12 guidelines that outline basic objectives for making web content accessible [26]. WCAG offers general suggestions regarding the types of images that should include alternative text, but it lacks specific guidelines on how to create alternative text for web images.

When determining the appropriate length for alternative text in image descriptions, opinions differ. Some research indicates that descriptions should be succinct, typically consisting of just a few words or, in some cases, one or two brief sentences [27]. Thatcher suggests that alternative text should be kept simple and brief, but there are instances where more explanations or content may be necessary, in which case the "longdesc" attribute can be employed [21]. For instance, images found on news or e-commerce websites often require longer descriptions. Nevertheless, Petrie et al. argue that there is no specific optimal word count for image alternative descriptions [1]. According to Petrie et al., in most of cases, it is suggested to include descriptions including the following aspects in the alternative text: "objects, buildings, people in the image; what is happening in the image; colours in the image; emotion, atmosphere of the image; location depicted in the image."

## **2.4 Describing visual works of art to blind and partially sighted people**

In an effort to make visually artistic exploration possible for people who are blind or partially sighted, museums are creating multi-sensory experiences. These initiatives aim to allow independent art exploration and foster a sense of comfort and engagement during museum tours. Blind and partially sighted people aspire to visit museums and galleries, participating in cultural and artistic experiences and contributing to social activities [28]. A local art gallery has developed three distinct approaches for accommodating blind and partially sighted visitors, allowing them to independently explore the gallery through virtual tours, self-guided tours, and guided tours [29]. Museums and galleries are encouraged to provide audio guides that make guided tours easy, offering directional guidance, and ensuring the accessibility of the premises for special groups. Furthermore, these guides are expected to feature engaging audio descriptions that are direct and convey artwork in an interesting manner [29]. However, it is worth noting that these audio descriptions are primarily designed with sighted visitors in mind [30]. An interactive multi-modal guide has been introduced that utilises 3D printing to transform 2-D artworks into tactile reliefs, helping blind and partially sighted visitors in comprehending art through a combination of audio and tactile elements [31]. As the development progresses, museums, galleries, and similar places have transitioned to digital platforms by building their websites. Simultaneously, many places provide blind and partially sighted people to access cultural and artworks through assistive technologies that facilitate web information access. While these institutions aim to present culture and artwork via images on their websites, the outcomes have been less than optimal, particularly in terms of the effectiveness of alternative text descriptions [32].

## **2.5 Descriptions of visual works of art to blind and partially sighted people**

Art enables the expression of significant concepts, feelings, and emotions through a wide range of forms, and greatly impacts society; therefore, should be available to everyone. Ensuring that blind and partially sighted people have access to visual art has become a matter of great importance. Considering that the majority of art forms, such as photography, sculptures, drawings, and paintings, rely on visual perception - it presents significant challenges for the staggering population of over 2.2 billion people with vision impairments [33]. Prior work in the fields of human-computer interaction (HCI) and accessibility has delved into technological approaches aimed at reducing these access barriers. These approaches include several methods such as providing support for museum navigation [30], including audio descriptions [34], using tactile graphics [35], using multimodal feedback [36], and facilitating virtual art tours via smart devices [37]. Despite previous state of the art approaches, there remains a dearth of knowledge regarding the adoption and usage of existing technology-based supports by people in the blind community. Specifically, we lack understanding of the factors that influence their use of these technologies to access visual arts [38]. For example, investing large funds in Braille may not be cost-effective for museums, given that fewer than 10% of blind individuals are Braille readers. While Braille remains valuable in the education of blind children, it's worth noting that many blind children today have additional disabilities that often hinder their ability to learn Braille, which is a challenging skill to acquire.

"Alt" text is useful for description of simple images, but it is insufficient when dealing with complex images that require longer descriptions [39]. In such cases, providing visual descriptions that describe the image's appearance for web visitors with visual impairments is recommended. This approach works similarly as audio descriptions, which offers verbal information to users who cannot visually perceive images. The guidelines developed for audio descriptions of visual arts do not specify any recommendations regarding the length of these descriptions [39]. However, guidelines for describing museum objects and paintings for blind and partially sighted people, do acknowledge that the human tendency to absorb and comprehend information at once is limited, particularly when it is not initially processed as visual information [40]. Therefore, it is suggested to keep these descriptions short, as blind and partially sighted users may have difficulty processing information that is not presented visually. Chen (2013) investigates opinions of visually impaired people and finds that short descriptions should be succinct and include important features like colour and size/dimensions [3]. On the other hand, long descriptions should offer more detailed information, including aspects such as colour, shapes, orientation, size/dimensions, and facial expressions, while keeping it clear and simple. Regarding length of the descriptions, the findings suggest that the longest description (with an average 132 words) among the short descriptions (with an average 34 words) is most useful to visually impaired people. Chen proposed that more examples based on the guidelines can be presented to the describers to help them gain better understanding of creating descriptions. Bai (2022) developed a set of 8 guidelines including aspects like: size, composition, style, colour, language, locations and directions and more, for describing 2D (paintings and images) and 3D artworks (sculptures) for blind and partially sighted people. The study found that the proposed guidelines were appropriately detailed, easy to understand, and well organised. It is important to note that the study's scope was confined to the perspectives of sighted people without expertise in art. This limitation raises questions about the accuracy and usefulness of the guidelines when developing for the blind and partially sighted people.

This project aims to investigate how art enthusiasts who wish to volunteer online can help in creating useful descriptions of artworks for blind and partially sighted people. These descriptions can then be made accessible on museum websites, audio guides, or catalogues. The main question is, what should be in descriptions of artworks for blind and partially sighted people, and which types of descriptions are helpful. To help volunteers create useful descriptions, it's crucial to develop detailed guidelines. This project also aims to fill in gaps from previous studies on crowdsourcing descriptions for artworks for blind and partially sighted people. This project will investigate experts from the art world in creating useful descriptions and more than one example for better understanding of the guidelines.



## CHAPTER 3. PRELIMINARY WORK ON DEVELOPING A NEW SET OF GUIDELINES FOR DESCRIBING WORKS OF ART FOR BLIND AND PARTIALLY SIGHTED PEOPLE

### 3.1 Introduction

This chapter presents the development of a new set of guidelines for describing works of art for blind and partially sighted people. The starting point was a set of guidelines developed by Bai (2022) as part of a previous MSc HCIT project. Further relevant material about describing art and related material such as discussed in Section 3.3. In addition, Bai did not have a chance to have her guidelines evaluated by people working in the art work or blind and partially sighted people. Therefore, this project aimed to conduct such an evaluation, after the revision of the guidelines.

### 3.2 Existing guidelines for describing artworks for blind and partially sighted people

Bai (2022) developed her guidelines by conducting an analysis of seven previous sources, which were guidelines and less formal guidance on how to describe works of art for blind and partially sighted people. These sources were:

1. *Art Education for the Blind (AEB) - Guidelines for describing art to blind and visually impaired individuals*: developed a substantial set of guidelines for describing art to blind and visually impaired individuals. These guidelines are comprehensive, with nearly 4300 words. However, some aspects of these guidelines are considered less than ideal due to some of the inappropriate wording [41].
2. *McGinnis and Weisen (1994) – Guidelines for describing museum objects and paintings to blind and partially sighted people*: adapted the AEB guidelines, simplifying and shortening them to 2477 words while enhancing the structural clarity. They also offered constructive criticism of the original AEB guidelines [40].
3. *Alonzo (2001) – Guidelines for describing visual works of art on the Web*: developed guidelines for people accessing art digitally unlike museum visits. Alonzo seemed to have been unaware of the AEB guidelines, stating the absence of existing guidelines for creating quality visual descriptions. His approach is that the descriptions should be objective and factual [39].
4. *Emilie Gossiaux - Guidelines for describing works of art to a blind person*: Blind artist Emilie Gossiaux developed three guidelines for describing artworks to people who are blind. Her guide highlights that the describer need not be an art expert to create effective descriptions, making it more accessible to a broader audience.
5. *Chen (2013) and Petrie et al (2014)*: Chen, under the guidance of Petrie, conducted a study examining how museum website images portrayed blind and partially sighted people. She interviewed both blind and partially sighted people, focusing on aspects like colour, size, orientation, image type, and emotional aspects. Based on her research, Chen created a set of guidelines applicable to both image overviews and specific museum image descriptions. Her research also determined the most suitable description length [3].

6. *Colmenero & Gallego (2021) – Evaluation and collaboration in creating online audio descriptions of visual art*: Colmenero and Gallego implemented the AccesArte project, a part of the Kaleidoscope internship program, which focuses on developing accessibility programs through audio description research. The project involves selective advertising for visual artwork, advertising formats, uses online open-access videos, and conducts both formative and summative assessments to enhance resources and enrich the learning experience with the involvement of blind and low vision (BPS) consultants [42].
7. *Abud et al. (2022) – Museum, audio description and tactile resources for visually impaired people*: focused on making Aldemir Martins' paintings, particularly "Galo," accessible to blind and partially sighted museum visitors in Brazil. They started by analysing the painting and creating an audio description. Then, they involved participants, including blind consultants, to ensure that tactile artwork they produced is in harmony with the audio description and this work led to the development of a set of guidelines [43].

Bai (2022) produced a set of 8 guidelines and a worked example based on those guidelines which is discussed in Table 3.2 and her guidelines were revised into 7 guidelines, these are listed in Table 3.1. The last year's guidelines covered various aspects of describing works of art, including providing an overview, describing size and dimensions of the work, colour, location and directions, and the medium and techniques used in the artworks. The existing guidelines described both two-dimensional works such as paintings, drawings and photographs and three-dimensional works such as sculptures. Bai (2022) evaluated the guidelines by asking interested members of the public (i.e., those who were interested in art, but not necessarily experts in the topic) to describe a number of works of art, both two and three dimensional, using the guidelines. She evaluated the quality of the works of art produced and the describer's experience of using them. She found that the guidelines offered an appropriate level of detail, were simple to comprehend, were well organised, and did not overwhelm the participants with too much information. However, participants reported only a moderate level of confidence in using the guidelines to describe the artworks, suggesting the need for further refinement and enhancement of the guidelines. Thus, there is considerable room for improvement in the guidelines as a support for interested members of the public describing artworks for blind and partially sighted people.

### 3.3 Revised guidelines for describing artworks for blind and partially sighted people

The following resources are used in revising the Bai's guidelines:

#### 1. Giansante, ArtBeyondSight (Writing Verbal Description Audio Tours)

Lou Giansante writes audio tours as an independent producer and for audio tour companies. He also works with Art Beyond Sight as a writer and producer of Verbal Description audio tours. He created 3 guidelines for *Writing Successful Verbal Description — Language for the Ear* and the guidelines are short and simple [44]. These guidelines state that when describing artworks, begin with fundamental details such as the title, artist's name, medium, and potentially the creation year and location where

it can be viewed. When describing paintings, provide the dimensions, specifying if the exact measurements are known or if an estimate is given and keeping simple and concise sentences. Starting with a brief overview of the painting's content and style is better before going into details. For representational paintings, clarifying the viewer's perspective, whether it's across a table, a field, or from above or below is important. Including colour descriptions and mentioning the style, technique, and how these elements impact the viewer's experience can build up an imagination for blind and partially sighted people [44].

## **2. Standards for Audio Description and Code of Professional Conduct for Describers**

These standards are based on the training and experience of audio describers and trainers from across the United States [45]. The guidelines are divided into 3 parts: basics, techniques and finer points for a better understanding. The standards unique to museum and exhibit description state that when providing descriptions, the perspective of the observer, using terms like "left" relative to their viewpoint should be adopted. For items in a display case, where one should stand for the description should be clarified to make sense [45]. A general-to-specific approach is always good, giving an overview before delving into details. The context should be established, the architecture can be described, if necessary, and then size using measurements should be addressed for clarity. Describing colours for both orientation and emotional or intellectual meaning holds a value. A comparison between visuals to other visuals is often ineffective. For example, "If one has never seen the night sky dotted with brilliant stars, then saying that the diamonds on the queen's skirt create this same effect will have little meaning" (p. 19) [45]. For items that cannot be touched, consider important textures, choosing relevant vocabulary. When describing two-dimensional works with depth, such as paintings, segment the description into foreground, middle ground, and background, starting from the foreground unless the primary focus is elsewhere [45].

## **3. Joselia Neves, Enriched Descriptive Guides: a case for collaborative meaning-making in museums**

This study explores how audio guides in museums can provide enhanced experiences by involving participants in the content creation process [46]. It uses the example of an Enriched Descriptive Guide (EDG) for the artwork "Features from Qatar" by artist Jassim Zaini to demonstrate how this audio guide was developed through collaborative efforts with various stakeholders. The study highlights that EDGs are most effective when created through collaborative meaning-making, offering prompts that engage the multisensory experiences, encourage cognitive exploration, and capture the cultural context [46]. The study highlights that EDGs are most effective when created through collaborative meaning-making, offering prompts that engage the multisensory experiences, encourage cognitive exploration, and capture the cultural context [46]. Figure 3.1 shows a textual structure, which was determined for the scripting of enriched descriptive guides. The textual structure demonstrates the different stages involved in crafting a text that is informative, expressive, and functional, ultimately resulting in a version that resonates with a broad audience [46].

IDENTIFICATION	What? By whom? when?
LOCALIZATION & CATCH PHRASE	How is presented? What makes it interesting?
THEME	What is it about?
DESCRIPTION	What does it look like? Depicted figures/objects Positioning Appearance Details
TECHNIQUE	What technique is used? Colour / light / perspective /...
FOCUS	What makes it special?
INTERPRETATION	What is it? How do you interpret it?

**Figure 3.1 Textual structure for the scripting of Enriched Descriptive Guides.**

Bai's guidelines were compared with the revised guidelines for describing artworks for blind and partially sighted people (see Appendix A). Bai's worked example based on the existing guidelines and a worked example based on the revised guidelines is also compared for describing artworks for blind and partially sighted people (see Appendix B).

### 3.4 Discussion

Bai's guidelines have been revised to improve the aspects and overall understanding of them, making them more suitable for creating descriptions of artworks for blind and visually impaired people. The revised guidelines now include an extended overview aimed at sighted people in empathising with blind and visually impaired people by using simple analogies in terms of their touch-experience of the visual world. Aspects such as *size* and *composition* have also been revised in terms of establishing comparisons and understanding the point of view with respect to the viewer. Additionally, the suggestion of a practice run exercise is included in the revised guidelines for visual understanding and imagination of the work of art. A creator can create a description of art and read it out to someone undisclosed and later, ask them to describe the artwork based on the description. This is to comprehend if the description was written well-detailed to capture the work of art. Evidently, the worked example based on the revised guidelines is using a general-to-specific approach, building a better overview of the painting before delving into the details. These revised guidelines will be utilised in the next study, which focuses on evaluation of the guidelines to create descriptions by art experts and blind and visually impaired people.

## **CHAPTER 4. STUDY I - EVALUATION OF GUIDELINES WITH PEOPLE WORKING IN THE ART WORLD, INTERESTED MEMBERS OF THE PUBLIC AND BLIND AND PARTIALLY SIGHTED PEOPLE USING THE DELPHI METHOD**

### **4.1 Introduction**

This study presents the evaluation of the revised guidelines by three key groups of relevant stakeholders, people working in the art world, interested members of the public (i.e., those interested in art, but not working in the art world) and blind and visually impaired. This evaluation was inspired by the Delphi method of consulting with domain experts in an online context conducted via an online survey deployed via the Qualtrics survey development tool <sup>[1]</sup>. Delphi technique is used in helping to reach an expert consensus and developing professional guidelines. In this method, a panel of experts is selected from both within and outside the organisation. In the questionnaire, the participants were initially asked to read the revised guidelines and worked example and later, rate the guidelines and the example and comment if it requires improvements. This study provides knowledge on the potential usefulness of the guidelines in describing artworks for blind and partially sighted people from the perspective of people with a knowledge of art, those working in the art world and blind and partially sighted people, who would be the consumers of such descriptions. This study also provides insights into how these guidelines can be further improved in the future.

#### **4.1.1 Delphi Technique**

This study utilises Delphi technique to conduct an evaluation of the guidelines. Delphi technique is used in helping to reach an expert consensus and developing professional guidelines [47]. In this method, a panel of experts is selected from both within and outside the organisation. These experts possess the necessary knowledge relevant to the field of decision-making. Anonymity is maintained for all participants, and their identities are not disclosed, even after the final report is completed. This approach arguably reduces personal biases among participants to some degree and encourages open criticism.

#### **4.1.2 Delphi Procedure**

The Delphi method operates on the principle that predictions or decisions made by a structured group of individuals tend to be more accurate than those made by unstructured group [48]. In this approach, experts respond to questionnaires in multiple rounds. Following each round, the researcher compiles an anonymous summary of the experts' opinions from the previous round, along with the reasoning they provided for their judgments. Thus, experts are encouraged to reevaluate their initial responses based on the feedback from other panel members. Ultimately, the round-process is stopped upon reaching a predefined stopping criterion (e.g., a set number of rounds, consensus achievement).

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<sup>[1]</sup> <https://york.eu.qualtrics.com/>

In this project, the questionnaire was shared with the experts and blind and visually impaired people to rate and provide their comments on the set of guidelines. Given the project timeframe and due to the extended duration of Delphi-round 2, the guidelines were revised on the basis of reasonings and judgments from round 1 and the Delphi round process was stopped.

## **4.2 Method**

The design of the study is based on the Delphi method of seeking the opinions of a range of domain experts and different stakeholders. Participants were asked to complete a questionnaire. The questionnaire presented the full set of guidelines and then each guideline one by one for participants to answer questions about. IT incorporated a mix of open ended and close ended questions to gather insights from participants in regards to their understanding of the revised set of guidelines for describing the artworks for blind and partially sighted people.

### **4.2.1 Participants**

The recruitment of participants was undertaken via emails to my supervisor's network of contacts in the community of people working in the art world and the community of blind and partially sighted people, as well as interested members of the public. In addition, Professor Michael White, Professor of History of Art at the University of York, recruited participants via emails to his contacts in the community of people working in the art world. The inclusion criteria were the following: the participants had to be working in the art world, an interested member of the public, or blind or partially sighted.

There were 28 participants in total, 18 sighted and 10 blind participants. Of the 18 sighted participants, 10 were female and 7 were male with one participant preferred not to disclose their gender. The average age of sighted participants is 46 years with an age range from 31 to 69 years. Of the 10 blind participants, 4 were female and 6 were male. The average age of blind participants is 48 years with an age range from 24 to 72 years. All the participants in the blind and partially sighted group self-reported as blind. As for non-sighted people's occupational status, 4 blind participants (40 %) are working and 6 blind participants (60%) are retired or currently unemployed whereas, there was a working population of 94% of sighted participants and 1 retired. Among those who are currently employed, there is a broad spectrum of occupations, spanning from Professors to Scientists.

### **4.2.2 Online questionnaire**

For the questionnaire, Qualtrics was used to share the questionnaire with the participants. The questionnaire started with an information page about this study, followed by an informed consent page. The main part of the questionnaire was structured into three parts: (1) guideline preamble for overview; (2) the set of 8 revised guidelines for participants to rate and comment; and (3) questions concerning participants' opinions on revised guidelines in describing the artworks, their art experience and their demographic information. In this questionnaire, 7-point Likert items were used. An example of the Likert item used in the questionnaire is shown in Figure 4.1.

How good or not do you think this guideline about colour is as it stands?

Needs major change (1)	2	3	4	5	6	Very good as it stands (7)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Figure 4.1 An example of the 7-point Likert item from the questionnaire**

The initial section of the questionnaire contained instructions outlining the requirements and asked participants to review the provided guidelines and the example description. These guidelines were also available to download as a docx as well as a PDF document. The second section of the questionnaire asked participants to go through the guidelines and rate its effectiveness and usefulness in describing artworks for blind and partially sighted people. The questionnaire presented each of the eight guidelines plus a preamble. The third section of the questionnaire asked participants for demographic information. This included age, gender, employment status, occupation and visual status. Participants were asked whether they had any experience with blind and partially blind people, and if so to provide a brief description of their experience. Participants were also asked about their experience with art theory, history and practice.

#### **4.2.3 Procedure**

Following the creation of the questionnaire, it was piloted with several colleagues. Once all the necessary materials were prepared, an email invitation with basic information about the nature of the questionnaire was sent to potential participants. Sighted participants were not compensated for their time, blind and partially sighted participants were offered a £10 Amazon gift voucher for participating in this study and the third study on evaluating the descriptions created using the new guidelines.

### **4.3 Results**

This section presents the results of the questionnaire divided into two distinct sections, firstly the results of the sighted people working in the art world and the interested public and then the results from the blind and partially sighted people.

#### **4.3.1 Results from the participants working in the art world, the interested members of the public and the blind and partially sighted people**

Table 4.1 shows the summary of the good or not of each of the guidelines and the examples were rated by participants for describing artworks for blind and partially sighted people. Based on the ratings given to the guidelines by the experts, the consensus (% of agreement) is derived. In this research, 'strong consensus' is defined as an agreement level of over 80% regarding a guideline, 'moderate consensus' falls within the range of 50-80% agreement on a guideline, and anything below 50% indicates 'weak consensus'. The level of consensus is 'strong' for the guidelines *language* and *practice run* as the 24 out of 28 participants and 23 out of 28 participants respectively rated these guidelines on the Likert item as 6 or 7 "very good as it stands". Similarly, the level of consensus is 'moderate' for the guidelines on *overview*, *size*, *composition*, *medium*, *style & technique*, *locations &*

*directions*, and *objective & subjective* as a range of 17 to 22 participants rated these guidelines on the rating item as 6 or 7. The example description also gives a *moderate* level of consensus as 22 out of 28 participants rated it “very good as it stands”.

**Table 4.1 Consensus on how good each guideline and the example are rated for describing artworks for blind and partially sighted people**

<b>Level of consensus - <i>Strong</i></b>	
<b>Guideline</b>	<b>% of Agreement</b>
<b>Language:</b> Use language that is clear and precise, but vivid and interesting. Don't worry about using some language that seems oriented to the visual world (e.g. "the background appears ..."), blind and partially sighted people usually understand this, as they are so used to hearing it.	24/28 (85%)
<b>Try a practice run:</b> If you want to practice, you could create a description of a work of art, then read that description to a friend who has never seen it. Ask them to describe the work. Then both look at it and discuss how well the description captured the work.	23/28 (82%)
<b>Level of consensus - <i>Moderate</i></b>	
<b>Guideline</b>	<b>% of Agreement</b>
<b>Preamble (Overview):</b> Start with a short overview of the work, then proceed to more detail. First sum up the work in one sentence, then elaborate. A blind person may find that one sentence is sufficient information. In both the overview and detail, try to follow a logical sequence through the work, left to right, top to bottom and so on, as appropriate. On the other hand, if there is a very striking detail or something that makes the piece special, that will attract sighted viewers, perhaps describing that first to create the same experience for blind people. Using simple analogies to something familiar can be helpful. But remember blind people may not have as much experience of the visual world as sighted people, so use very familiar ideas, that people might experience by touch, for example: It's as big as a car/an orange It's a long rectangular shape, like a shoe box The body of the mandolin is shaped like a pear Whereas “like the night sky dotted with brilliant stars” is no help to someone who has never seen the night sky.	21/28 (75%)
<b>Size:</b> of both the overall work and components within it. You can use	



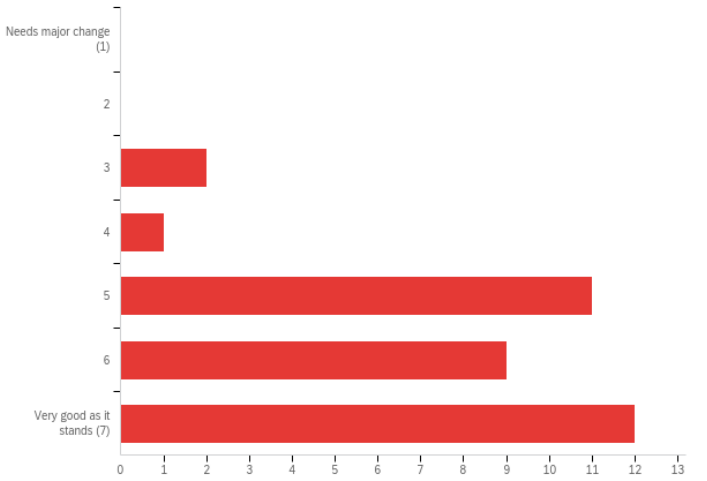
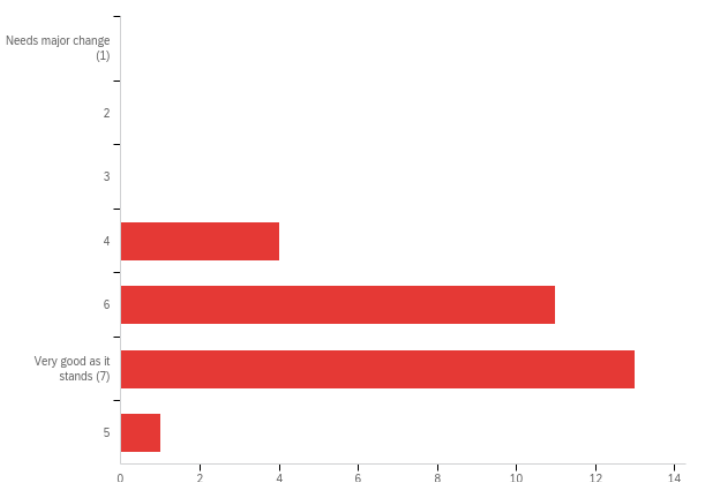
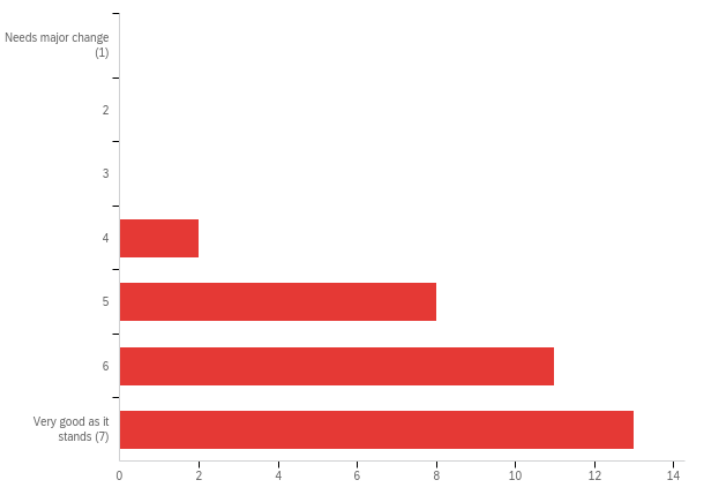
comparisons that everyone is able to relate to, for example for a very large work, such as a sculpture in the open air, it is about three times a typical man's height, for a small work, actual dimensions are useful.	17/28 (60%)
<b>Composition:</b> describe the key elements of the piece and how they fit together. It can be helpful to establish a point of view, for example whether you are looking directly at a scene, from above or below.	17/28 (60%)
<b>Medium, style, technique:</b> provide information (to the extent that you can) about the medium or materials the work is made of, if relevant the technique(s) used and the artist's style. But to avoid jargon that an average person would not be familiar with, "abstract" and "realistic" are likely to be understood but "Geometric Abstractionist" and "French Academic" are not.	22/28 (78%)
<b>Locations and directions:</b> blind and partially sighted people are very often taught to locate things using a clock face, so this can be used to locate things in a work (e.g. in the example it says, "at three o'clock is a convict"). The words left and right can be ambiguous. So if you use these words, always explain them – the viewer's left or to the left of an object in the work.	21/28 (75%)
<b>Colour:</b> some partially sighted people see some or all colours, others do not; some are interested in colour, others are not. Some blind people are also interested in colour, others are not. So describe colours, and be as specific as possible, so the information is there for those who are interested.	20/28 (71%)
<b>Objective and subjective:</b> Be generally objective in describing the work, but interpretation or your subjective reaction is also interesting. Just make sure it is clear what is your interpretation and what is objective description.	22/28 (78%)
<b>EXAMPLE DESCRIPTION:</b> An oil painting of a man standing by large bare tree trunks. It is over a metre high and one and a half metres long. The painting is semi-abstract, the tree trunks which dominate the middle of the picture from top to bottom, are quite realistically depicted but the man is crudely painted. It is clear he is a convict as he is wearing a black and white striped top. He is very small in comparison with the trees which are more than six times as tall as he is. It is hard to tell whether he is standing next to the trees and is small in comparison to the trees or whether he is standing further away which makes him look small, as there is little indication of depth or perspective in the painting. The trees have no leaves, they each start with a single trunk very roughly painted in dark brown, fading to beige and then spreading out a little into pale blue-grey twisted branches. They may give the viewer the impression of being lit by a ghostly light from below.	22/28 (78%)

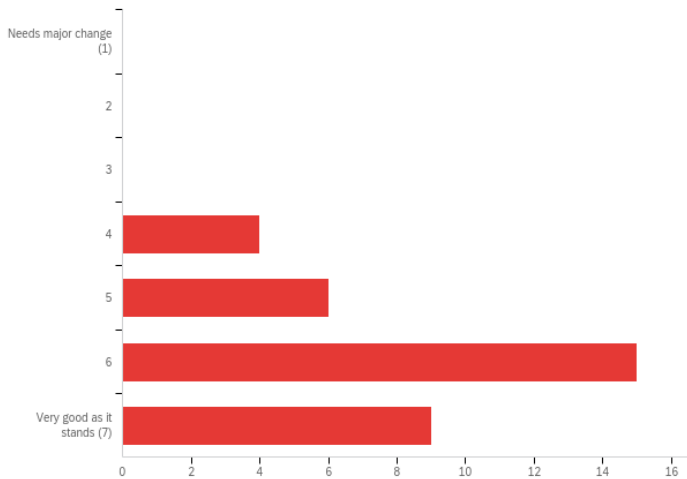
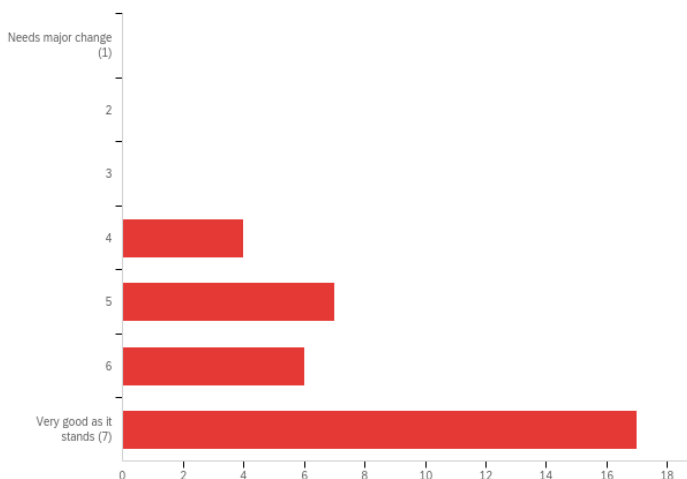
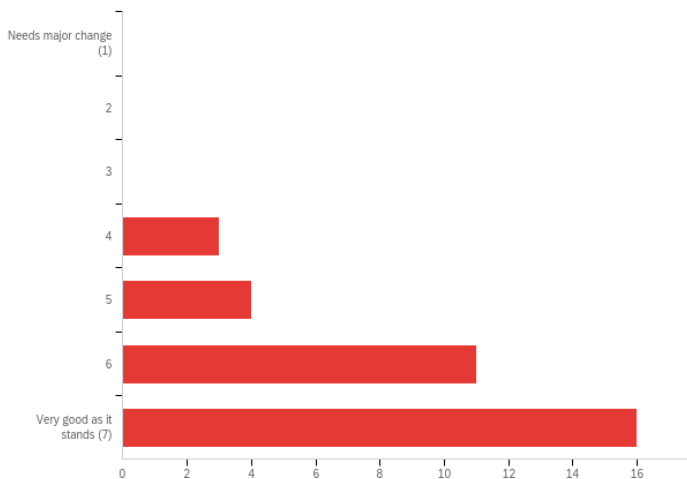
<p>The background is very roughly painted with the brush strokes visible. The colour shades from dark brown at the bottom of the painting, some mid blue in the middle to more dark brown at the top, with mixing of the colours. There are no features visible in this background, just the paint strokes and the changing colour.</p> <p>The overall impression the painting gives me is of the convict lost and overwhelmed by this featureless, incomprehensible landscape, with the ghostly, twisted branches of the trees suggesting his mental torture.</p>	
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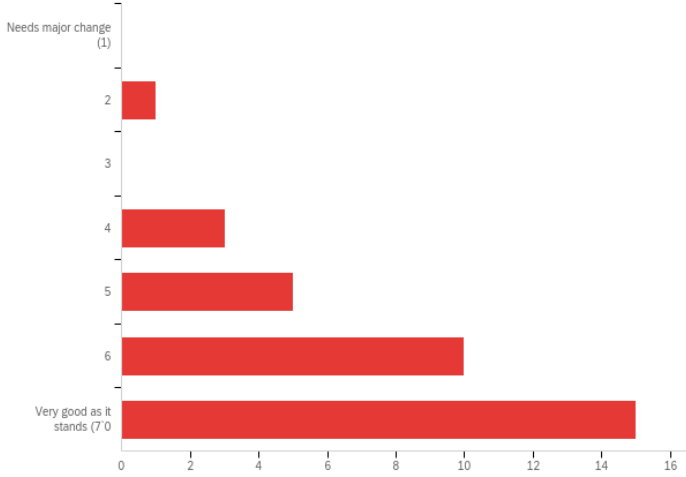
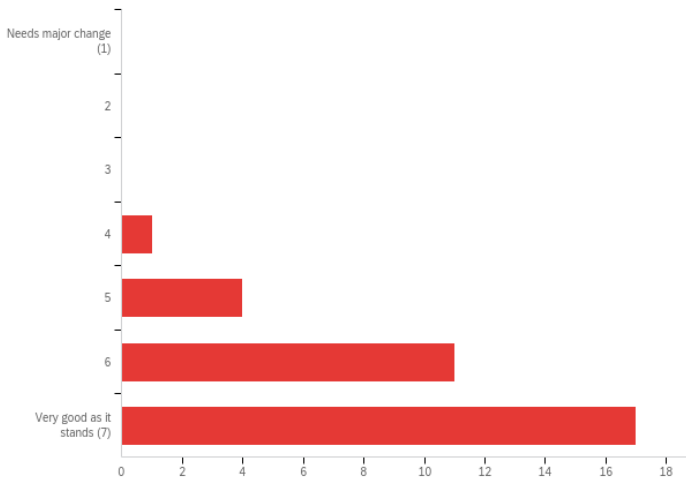
Table 4.2 presents the median ratings of the guidelines and calculates the median for each guideline. Evidently, the median for each guideline ranges from 6-7. The experts' ratings and recommendations are discussed in the next section.

**Table 4.2 Median and Semi Interquartile ranges (SIQR) of the ratings for each of the guidelines**

Guideline	Data (number of participants: ratings)	Median  SIQR																
1. Overview	<table><caption>Data for Guideline 1: Overview</caption><thead><tr><th>Rating</th><th>Number of Participants</th></tr></thead><tbody><tr><td>1 (Needs major change)</td><td>1</td></tr><tr><td>2</td><td>0</td></tr><tr><td>3</td><td>1</td></tr><tr><td>4</td><td>3</td></tr><tr><td>5</td><td>6</td></tr><tr><td>6</td><td>16</td></tr><tr><td>7 (Very good as it stands)</td><td>12</td></tr></tbody></table>	Rating	Number of Participants	1 (Needs major change)	1	2	0	3	1	4	3	5	6	6	16	7 (Very good as it stands)	12	6.0  1.0
Rating	Number of Participants																	
1 (Needs major change)	1																	
2	0																	
3	1																	
4	3																	
5	6																	
6	16																	
7 (Very good as it stands)	12																	

2. Size	 <table><tr><th>Rating</th><th>Count</th></tr><tr><td>Needs major change (1)</td><td>0</td></tr><tr><td>2</td><td>0</td></tr><tr><td>3</td><td>2</td></tr><tr><td>4</td><td>1</td></tr><tr><td>5</td><td>11</td></tr><tr><td>6</td><td>9</td></tr><tr><td>Very good as it stands (7)</td><td>12</td></tr></table>	Rating	Count	Needs major change (1)	0	2	0	3	2	4	1	5	11	6	9	Very good as it stands (7)	12	6.0
Rating	Count																	
Needs major change (1)	0																	
2	0																	
3	2																	
4	1																	
5	11																	
6	9																	
Very good as it stands (7)	12																	
3. Composition	 <table><tr><th>Rating</th><th>Count</th></tr><tr><td>Needs major change (1)</td><td>0</td></tr><tr><td>2</td><td>0</td></tr><tr><td>3</td><td>0</td></tr><tr><td>4</td><td>4</td></tr><tr><td>6</td><td>11</td></tr><tr><td>Very good as it stands (7)</td><td>13</td></tr></table>	Rating	Count	Needs major change (1)	0	2	0	3	0	4	4	6	11	Very good as it stands (7)	13	6		
Rating	Count																	
Needs major change (1)	0																	
2	0																	
3	0																	
4	4																	
6	11																	
Very good as it stands (7)	13																	
4. Medium, Style and Technique	 <table><tr><th>Rating</th><th>Count</th></tr><tr><td>Needs major change (1)</td><td>0</td></tr><tr><td>2</td><td>0</td></tr><tr><td>3</td><td>0</td></tr><tr><td>4</td><td>2</td></tr><tr><td>5</td><td>8</td></tr><tr><td>6</td><td>11</td></tr><tr><td>Very good as it stands (7)</td><td>13</td></tr></table>	Rating	Count	Needs major change (1)	0	2	0	3	0	4	2	5	8	6	11	Very good as it stands (7)	13	6
Rating	Count																	
Needs major change (1)	0																	
2	0																	
3	0																	
4	2																	
5	8																	
6	11																	
Very good as it stands (7)	13																	

5. Location and Directions	 <table><tr><th>Category</th><th>Score</th></tr><tr><td>4</td><td>4</td></tr><tr><td>5</td><td>6</td></tr><tr><td>6</td><td>15</td></tr><tr><td>7</td><td>9</td></tr></table>	Category	Score	4	4	5	6	6	15	7	9	6
Category	Score											
4	4											
5	6											
6	15											
7	9											
6. Colours	 <table><tr><th>Category</th><th>Score</th></tr><tr><td>4</td><td>4</td></tr><tr><td>5</td><td>7</td></tr><tr><td>6</td><td>6</td></tr><tr><td>7</td><td>17</td></tr></table>	Category	Score	4	4	5	7	6	6	7	17	7
Category	Score											
4	4											
5	7											
6	6											
7	17											
7. Language	 <table><tr><th>Category</th><th>Score</th></tr><tr><td>4</td><td>3</td></tr><tr><td>5</td><td>4</td></tr><tr><td>6</td><td>11</td></tr><tr><td>7</td><td>16</td></tr></table>	Category	Score	4	3	5	4	6	11	7	16	6
Category	Score											
4	3											
5	4											
6	11											
7	16											

8. Objective and Subjective	 <table><thead><tr><th>Rating</th><th>Count</th></tr></thead><tbody><tr><td>Needs major change (1)</td><td>1</td></tr><tr><td>2</td><td>0</td></tr><tr><td>3</td><td>0</td></tr><tr><td>4</td><td>3</td></tr><tr><td>5</td><td>5</td></tr><tr><td>6</td><td>10</td></tr><tr><td>Very good as it stands (7)</td><td>15</td></tr></tbody></table>	Rating	Count	Needs major change (1)	1	2	0	3	0	4	3	5	5	6	10	Very good as it stands (7)	15	7
Rating	Count																	
Needs major change (1)	1																	
2	0																	
3	0																	
4	3																	
5	5																	
6	10																	
Very good as it stands (7)	15																	
9. Practice	 <table><thead><tr><th>Rating</th><th>Count</th></tr></thead><tbody><tr><td>Needs major change (1)</td><td>1</td></tr><tr><td>2</td><td>0</td></tr><tr><td>3</td><td>0</td></tr><tr><td>4</td><td>1</td></tr><tr><td>5</td><td>4</td></tr><tr><td>6</td><td>11</td></tr><tr><td>Very good as it stands (7)</td><td>17</td></tr></tbody></table>	Rating	Count	Needs major change (1)	1	2	0	3	0	4	1	5	4	6	11	Very good as it stands (7)	17	7
Rating	Count																	
Needs major change (1)	1																	
2	0																	
3	0																	
4	1																	
5	4																	
6	11																	
Very good as it stands (7)	17																	

#### 4.3.2 Experience of sighted people in the art world and with visually impaired people

All 28 participants answered the additional questions concerning their experience, opinions on guidelines and demographics. The participants were asked about their experiences with people who have visual impairments, and 6 participants (33.3% reported having “a great deal” of experience (rated on a scale from “no experience” being 1 and “a great deal” being 7). One of these 6 participants, 2 participants have professional experience in accessibility for visually impaired people. 2 participants volunteer with charitable organisations to help blind and visually impaired students. Others help their partially sighted friends and colleagues. About 33% of participants have “a great deal” of experience in art theory, history or practice as they chose scale 6-7. Out of these 6, 3 participants have a major in Art History course. One of them is a Professor of History of Arts while other 2 participants are working in the art sector and are very much interested in art.

#### 4.4 Discussion

It can be seen from the results of the Delphi study that the sighted participants rated the guidelines on a median scale of 6.0-7.0. The guidelines were revised based on the Delphi study to describe

artwork for blind and partially sighted people. Based on the findings from the Delphi technique, it becomes evident that the aspects of *Language* (85%) and *Practice run* (82%) received a strong consensus rating of “very good as it stands” in the descriptions for all artwork images. However, there are some opinions on how it can be improved. The guideline on Language had some popular opinions on strong emphasis and contextual guidance, for example:

“You could probably replace 'usually' with 'should' or 'will'.” (VI1<sup>3</sup>)

“I would emphasise this more strongly! Blind people not only understand such language, most of us actively use it! If I want to let you know that we will meet again tomorrow, I'll just say, "See you tomorrow," or "See you later!" .. Sighted people tie themselves in knots sometimes trying to avoid using sight words!” (VI5)

“Most sighted people will not have thought much about how their terminology depends on having seen something. a couple of examples beyond 'background' would be helpful.” (S12)

“good general stuff, but provide more info (just saying but don't worry about using colour can be misread: more contextual guidance is needed to support responsive describers.” (S17)

While the guideline on Practice Run received considerable favour, there was a consensus on the practicality of conducting this practice run with a visually impaired person. For instance:

“Maybe emphasise that optimally the person (friend) would be visually impaired.” (P16)

“Could it suggest the person might have a friend, colleague, or family member with visual impairments, or could work with a community group/org to trial it, rather than testing with someone without visual impairments?” (P18)

For the Preamble (overview) guideline, the expert opinions emphasised mentioning striking details ahead of logical order descriptions, for example:

“Rather than saying to start describing in a logical order, left to right and up to down, followed by saying on the other hand if there is a striking detail. I would suggest that, if there is a specific element, that will always catch a sighted-person's eye first... A description of the picture should start with those attention-grabbing aspects, followed by background elements..” (VI5)

“I would have put the part about starting with striking details that may draw the sighted person's eye before the part about logical descriptions from left to right or top to bottom. For example, start by describing any key features that in most art would be central then go on to an overall description which should be more logical like left to right, top to bottom etc...” (VI6)

For the guideline on Size, expert opinions highlighted the importance of referencing size in relation to components that can be understandable to a broad audience, including blind and partially sighted people. For example:

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<sup>[3]</sup> Participants are coded with S for Sighted Participants and VI for Visually Impaired Participants.

“Try and compare it to things blind people have touched. So 3 times the size of a man would not be helpful. Dimensions would be no good to me as I don’t know how long, for example, a metre is, so telling me something is a metre high would mean nothing to me as I can not visualise how tall a metre is.” (V17)

“Real dimensions are useful to me, as I fancy myself as a handy person who is used to measurements. Comparisons with familiar objects are also useful, so I'd suggest using both real dimensions and comparisons if available.” (V17)

For the guideline on Composition, another aspect was deemed essential with this aspect which is establishing perspective. For example, whether the artwork is viewed at the centre, or the artwork is more prominent on the viewer's right side than the left. The experts' recommendations were to give better orientation in imagining the artwork better.

The most frequently suggested recommendations revolved around describing the texture of the artwork like smoothness or comparisons such as 'textured like sand' or 'resembling the texture of grass' for the guideline regarding Medium, Style, and Technique. To the guideline regarding Locations and Directions, the term 'clock face' proved to be confusing for many participants. A frequently proposed suggestion was to integrate this particular guideline into those associated with composition, as they appeared closely interconnected.

The guideline on Colour provides intriguing feedback, particularly emphasising the need for greater specificity in describing factors such as colour intensity and shades when conveying colour information to blind and visually impaired people. For instance:

“Should the colours be named or related to objects? blue like the topical sea or blue like the arctic sea. Or cobalt or indigo blue. This should be included in the guideline.” (P10)

“..Naming colour is one thing. Talking about how colours interact with each other is another. Perhaps provide further pointers to what might be expected. Comments about light and shade, hue, intensity?” (P12)

For the guideline regarding Objective and Subjective, the term 'objectivity and subjectivity' proved to be confusing for many participants. A common suggestion put forward was to incorporate this guideline with practical examples to help illustrate the concepts of objectivity and subjectivity cohesively.

The consensus data and opinions mentioned above were carefully considered, leading to an analysis and subsequent revision of the guidelines to improve their clarity and comprehension. Due to the extended duration of Delphi round 2, the initial guidelines revision from round 1 was utilised as the foundation for shaping the user study discussed in Chapter 5. In the light of the insights and constructive feedback from Delphi study, listed a practical set of guidelines were formulated for describing works of art for blind and visually impaired people (See Appendix C).

## CHAPTER 5. STUDY II – EVALUATING THE GUIDELINES

### 5.1 Introduction

This study presents the evaluation of the revised guidelines by asked interested members of the public to use them to create descriptions of artworks of art. This user evaluation was conducted using an online survey created using the Qualtrics survey tool and deployed via the research recruitment platform, Prolific. In the survey, first they were asked to study the guidelines, then they were asked to create three descriptions, following the guidelines. Then, participants were asked about their knowledge of art, their experience with visually impaired people and their evaluation of the guidelines. This study provides information about the practical use of the guidelines in supporting interested members of the general public in creating descriptions of artworks for blind and partially sighted people. This study also provides insights into how these guidelines can be further improved in the future. The appropriately detailed descriptions of the artwork collected from the participants will be utilised in the next study, which focuses on evaluation of the quality of the guideline-based artwork descriptions by visually impaired people.

### 5.2 Method

In this user evaluation, the participants were asked to complete a questionnaire as it is relatively faster than interviews and focus groups. The questionnaire was designed with both, open ended as well as close ended questions, in order to obtain participants' understanding on the revised set of guidelines for describing the artworks for blind and partially sighted people and their experience of using them.

#### 5.2.1 Participants

The participants recruitment for this testing was done via Prolific.co, a research participant recruitment platform. The inclusion criteria were: the participants had to be over the age of 18 years, have English as their first language and currently residing in the UK. Before publishing the questionnaire, responses based on a balanced gender representation were requested within Prolific. 23 participants of the general public participated, 13 are males, 9 are females and 1 non-binary/ third gender, aged between 25 to 55 years. All participants are sighted people living in the UK whose first language is English. Among those who are currently employed, there is a broad spectrum of occupations, spanning from English teachers to social workers. 14 participants (60.86 %) are full-time or self-employed, 3 participants (13%) are part-time employed and 6 participants (26%) are students. Of the students, the data is unknown if they were qualified or studying an art related subject.



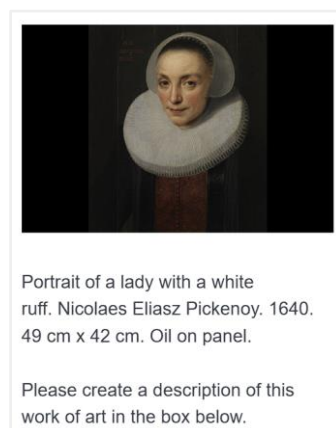
### 5.2.2 Materials

For the questionnaire, a Prolific.co was used to recruit the participants and the questionnaire contained all the information about this study along with a request for their consent to partake in the research. The online questionnaire was structured into three parts: (1) initial instructions for the questionnaire, guidelines along with guidance on how to describe artworks, and two illustrative examples on creating description; (2) a set of six artworks for participants to describe; and (3) questions concerning participants' opinions in describing the artworks, their experience with visually impaired people and their demographic information. In this questionnaire, the 1-to-7 Likert scale is used. An example of the linker scale used in the questionnaire is shown in Figure 5.1.

	not at all						very much
had too much information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
provided the right level of detail	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
were easy to understand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
were well organized	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the examples were useful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Figure 5.1 An example of the Likert scale**

The initial section of the questionnaire contained instructions outlining the requirements and requested participants to review the provided guidelines and both of the example descriptions. These guidelines were also available to download as a PDF document in case participants wished to refer to them while creating the descriptions. The second section of the questionnaire required participants to undergo a task to generate descriptions for three images. The questionnaire featured a total of six images (see Appendix D), with Qualtrics' random selection to assign three images to each participant for description. Basic details about each image, including the artist, date, dimensions, and medium, were presented beneath each picture. An example of an artwork image is shown in Figure 5.2.



**Figure 5.2 An example of an artwork image**

The later section of the questionnaire asked participants to assess the ease or difficulty of creating descriptions for the images and the participants who had prior experience with visually impaired people were prompted to provide a brief description of their experiences. This section also covered questions delved into participants' engagement with art, including their level of interest, knowledge, how they acquired their art knowledge, and the frequency of visits to art museums or galleries. Additionally, the participants were solicited for their opinions on the guidelines - whether they felt the guidelines provided excessive information, if the level of detail was appropriate, how comprehensible they found the guidelines, the usefulness of the provided examples, and an optional textbox for additional comments. Finally, the participants were asked for basic demographic details, including age, gender, employment status, and occupation.

### **5.2.3 Procedure**

Following the creation of the questionnaire, it underwent a thorough review by the Supervisor. Once all the necessary materials were prepared, a recruitment message was posted on the research participant recruitment platform, Prolific (prolific.co). Participants were compensated fairly for their participation, with the estimated time required to complete the study being approximately 30 minutes.

### **5.2.4 Data Analysis**

Once the data collection was completed, content analysis was used for analysis on all descriptions gathered from the 23 participants. For each description, metrics such as total length were computed and their adherence to the provided guidelines were analysed. The data obtained from the additional questions such as concerning the demographics and knowledge of art were also subjected to content analysis.

## **5.3 Results**

This section presents the outcomes of Study II, including two distinct categories of results. Firstly, it comprises the findings derived from the content analysis of descriptions for the six images. Secondly, it presents the results obtained from the additional questions. There are 23 participants of the general public who participated in the user testing, out of which 13 are males, 9 are females and 1 non-binary/third gender, aged between 25-55. All these participants are sighted people in the UK and are target users of the guidelines.

### **5.3.1 Descriptions of the images**

This study used guidelines with 7 useful aspects to describe an artwork in detail. The participants had to refer to the revised guidelines and include useful aspects while creating the descriptions. Table 5.2

provides an overview of the number of descriptions generated for each image, along with the average word count in these descriptions, and the percentage of participants who used each of the aspects of the guidelines in describing artwork images. It can be seen that the mean number of words in the descriptions was 111.07, but ranged from 95.68 for the Biscomb painting to 113.88 for the LeQuesne painting.

**Table 5.2 Summary of descriptions of images**

Artwork	No. of descriptions	Mean No. of words per description	Size	Perspective and composition	Medium, Style and Technique	colour	Describing People	language	Objective and Subjective
Biscomb	16	95.68	56.2%	56.2%	62.5%	100%	NA	93.7%	93.7%
Goldberg	14	125.71	64.2%	78.5%	78.5%	85.7%	92.8%	92.8%	100%
Gordon-Cumming	13	109.07	46.1%	84.6%	69.2%	69.2%	61.5%	92.3%	100%
LeQuesne	18	113.88	50%	50%	88.8%	77.7%	NA	94.4%	88.8%
Pickenoy	14	109.71	50%	57.1%	78.5%	78.5%	100%	92.8%	100%
Scott	15	112.40	80%	66.6%	73.3%	93.3%	NA	93.3%	93.3%
<b>Mean value</b>		<b>111.07</b>	<b>57.7</b>	<b>65.5</b>	<b>75.13</b>	<b>84</b>	<b>84.76</b>	<b>93.2</b>	<b>95.9</b>

### **5.3.2 Experience and demographics**

For the first question “How easy or difficult did you find creating descriptions of the works of art?” About 22% of the participants think creating descriptions are just about moderately easy as they have chosen the response of 4 and 5 (on the 7-point item), however, about 35% of the participants think creating descriptions are difficult, as the chosen scale is 2 and about 17% have chosen the scale 1 who found creating descriptions very difficult. There is one participant (4%) who has chosen scale 6 which means it is close to very easy to create descriptions for them. As part of an optional follow-up question, 18 participants responded to a request to elucidate what challenges they encountered while creating descriptions. The most frequent comments describe the difficulty of describing colours and the details for example:

“It was difficult not to use visual terms and to know how to describe colours.” (P23)

“Trying to see this from a visually impaired point of view and not assuming people would know all about colours.” (P20)

“Putting my thoughts and feelings about the paintings into words to describe them.” (P18)

“I had trouble trying to establish the level of details I needed to provide to give a clear description of the picture.” (P15)

“I found it hard to be anymore descriptive than just describing the colours and shapes mainly!” (P5)

The general comments describe the difficulty of describing for people who cannot see, for example:

“Being able to describe the paintings for other people to understand.” (P14)

“It’s quite hard describing things so another person can imagine what you are seeing” (P9)

“I Found it hard to describe everything in detail for the image to someone who may be blind. I really had to think about I was looking at and couldn't always describe what it was.” (P7)

The other comments describe the difficulty of remembering the guidelines, for example:

“I enjoyed this task but had to remember all the things to include. Perhaps in addition to the guidelines there could be a short summary in bullet point form that's easy to glance at?” (P21)

“..there were a lot of guidelines to remember and follow in the timeframe but i hope my input was useful.” (P22)

The participants were asked about their experiences with people who have visual impairments, and 8 respondents (34.7%) reported having such experiences. One of these 8 participants, identified themselves as partially sighted. One of them has experience as a carer for people with deteriorating eyesight and blindness. One participant volunteers with a charitable organisation to help out blind and visually impaired people. Two participants help their partially sighted friend and a grandparent.

Of the participants, 8 respondents (34.7%) report being moderately knowledgeable about art from their learnings from school, college and the internet. One of the participants is a degree holder in Art History and has a moderate knowledge of art. About 3 respondents (13%) prefer visiting art museums and galleries several times a year, another 3 respondents (13%) prefer making a visit about once a month and 11 respondents (47.8%) make a visit at least once in a year.

About 60% of participants felt confident in creating descriptions with the help of guidelines as they have chosen the scale from 5 to 7. For the Likert item, *did you think that the guidelines for creating descriptions of works of art for blind and partially sighted people (1) had too much information*: about 13% of participants think it had too much information, however, about 26% of the participants think the guidelines did not have too much information as they have chosen the rating 2. *(2) had the right level of detail*: about 23% of participants think the guidelines are moderately detailed, and about 13% of the participants think the guidelines are appropriately detailed as they have chosen the rating 7. *(3) easy to understand*: about 21% of participants think the guidelines are difficult to understand, however, about 34% of participants think the guidelines are moderately easy to understand, and about 13% of the participants think the guidelines are very easy to comprehend as they have chosen

the rating 7. (4) *well organised*: about 21% of participants think the guidelines are well organised, and about 23% of the participants think the guidelines are moderately organised. (4) *has useful examples*: about 43% of participants think the examples were useful, and only 4% of the participants think the examples were not useful as they have chosen the scale 3. As part of an optional follow-up question, 14 participants responded to a request to share their experience while creating descriptions. The most frequent comments comment on the length of the guidelines:

"I think they had too much analysing. If I were blind and needed a screenreader, I'd be lost." (P2)

"I found the examples useful to get an idea and give a base line. However the guidelines were very long, maybe a little too long!" (P4)

"I felt the guidelines were good, albeit a little bit long for my tastes. It gave me a decent framework to work within.." (P16)

"the guidelines were very lengthy and a lot to take in." (P18)

"As I said before I would like a short summary in bullet point form to reference as well. I feel like the guidelines were useful but something short to read before each work, or towards the end of that work would be excellent. For example when at one point with the watercolour I realised I'd only mentioned the colour of the sky so needed to add in some more colours." (P21)

"It would have been easier to have a summary of the guidelines in a list format at the end of the pdf. I did go back and forth from my descriptions to the guidelines but it was taking time to find what I wanted, having a list would have been useful for the study." (P23)

The general comments describe the guidelines as detailed enough:

"I referred to them a little and they helped with the general structure of writing the descriptions. Although mine were not as long." (P5)

"They were very informative." (P7)

"Guidelines were simple to follow." (P10)

"They were very thorough" (P13)

"Good examples. However, very wordy." (P14)

## 5.4 Discussions

According to the results of the study, the participants found that creating descriptions can be challenging with long guidelines as they found it overwhelming to remember, however, the participants applied the guidelines thoroughly in creating useful descriptions of works of art. It can be seen, the descriptions contained about 111 words on average, ranging from 95 to 125 words. Based on the findings from the analysis of the descriptions, it becomes evident that the aspects of *objective & subjective* (95.9%), and *language* (93.2%) were the most frequently mentioned aspects in the descriptions for all artwork images. Additionally, aspects like *color* (84%) and *describing people* (84.76%) are the commonly mentioned ones which indicates that color and knowing people is important for members of the public in describing artworks for visually impaired people. However,

only half the participants mentioned the *size* of all artworks from the guidelines. What is interesting to mention is that only image 6 has the highest mentioning of *size* in the description to about 80%. Other aspects like *perception & composition* and *medium, style and technique* are mentioned in the descriptions to a moderate extent ranging from 65-75 percent. In general, the colour, objectivity & subjectivity, size, the perception, style & technique are the important information to provide in the image description for blind and visually impaired people.

There are diverse perspectives regarding the depiction of colours in image descriptions. The results show that 35% of participants think that creating descriptions are difficult and they have frequently mentioned that describing colours and the detailing of an image is where it makes it most difficult for them. One of the insights which can explain this could be that the participants found the guidelines too long and had a tough time recalling them. Another common insight for this explanation is that the participants found it difficult to describe an artwork for people who cannot see, which indicates that they had a tough time filling in shoes of people who cannot see. Since *colour* is a commonly mentioned aspect in the descriptions, it potentially indicates that there is some room for improvement in the guidelines for this aspect. The length of guidelines can be considered to be shortened, however, keeping the detailing intact as about 23% of participants think the guidelines are moderately detailed.

## **CHAPTER 6. STUDY III - EVALUATION OF DESCRIPTIONS BY BLIND PEOPLE**

### **6.1 Introduction**

This study presents the evaluation of a total of 9 descriptions by 10 blind and partially sighted participants from Study 1 and the main purpose of this study is to evaluate the usefulness of the descriptions to the blind and partially sighted people. This evaluation was conducted via Qualtrics, an online survey deployed via the Qualtrics survey development tool<sup>1</sup>. In the questionnaire, the participants were asked to read three descriptions of three paintings each (see Appendix E) - one short, one medium length and one long & more detailed. Later, rate the descriptions on a scale from 1-5 and comment on what is “most useful” and “least useful” about them. In the analysis phase, the ratings and comments were analysed. This study provides knowledge on the potential usefulness of the descriptions from the consumers of such descriptions, blind and partially sighted people, in creating descriptions of artwork.

### **6.2 Method**

The design of this study is based on the questionnaire of seeking the comments of blind and partially sighted people. Participants were asked to complete a questionnaire. The questionnaire presented 3 paintings with three types of descriptions - one short, one medium length and one long & more detailed for each. Then all the 3 descriptions (9 in total) for each painting were to be rated on a scale 1-5 and provide a comment on each description’s usefulness. The questionnaire incorporated a mix of open ended as well as and close ended questions, to gather insights from blind and partially sighted people in regards to their understanding of the descriptions for describing the artworks.

#### **6.2.1 Participants**

Out of 10 blind and partially sighted participants from Study 1, only 6 participated in this study. The recruitment of participants for this evaluation was undertaken via e-mails to the same blind and partially sighted people who participated in Study 1 from my supervisor’s network of contacts in the community of blind and partially sighted people.

#### **6.2.2 Online questionnaire**

For the questionnaire, Qualtrics was used to share the questionnaire with the participants. The questionnaire started with an information page about this study, followed by an informed consent page. The Qualtrics main part of the questionnaire was structured into a set of 3 descriptions for each of the 3 paintings for participants to rate and comment. In this questionnaire, the 5-point Likert items were used. An example of the Likert item used in the questionnaire is shown in Figure 6.1.

Overall, how useful or not was this description?

☐ Not at all useful

☐ Slightly useful

☐ Moderately useful

☐ Very useful

☐ Extremely useful

**Figure 6.1 An example of the 5-point Likert item from the questionnaire**

The initial section of the questionnaire contained instructions outlining the requirements and asked blind and partially sighted people to review the provided three descriptions and assign a rate its usefulness (as seen in Figure 6.1) in describing artworks for them.

### 6.2.3 Procedure

Following the creation of the questionnaire, it was piloted with the supervisor. Once all the necessary materials were prepared, an email invitation with basic information about the nature of the questionnaire was sent to potential participants. The participants were offered a £10 Amazon gift voucher for participating in this on evaluating the descriptions created using the new guidelines.

### 6.3 Results

This section presents the results of the evaluation of the descriptions. Participants were asked to rate the guidelines on Likert items scaled from not at all useful (1) to extremely useful (7). The summary of results for the Painting 1 by Eileen Scott are shown in Table 6.1. It can be seen that only Description 3 is rated significantly better than the midpoint of the scale, although Description 2 approached close (“a trend towards significance”). Upon comparing the three comparisons, a Related-Samples Friedman's Two-Way Analysis of Variance by Ranks showed there was a significant difference in the ratings among the three descriptions ( $H = 9.09$ ,  $p < 0.011$ ). Post-hoc comparisons showed that Description 3 was rated significantly better than Description 1 ( $p = 0.012$ ), other comparisons did not differ significantly from each other. In the case of the Painting 1 by Eileen Scott, the longest description is considered the most favourable to the blind and partially sighted people, while the descriptions of medium and shorter length did not show any difference in their usefulness.

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[1] <https://york.eu.qualtrics.com/>



**Table 6.1 Summary of results of Painting 1 by Eileen Scott, "Anchusa", mixed media, 2000**

Description	Length - words (Participant)	Median (SIQR)	Wilcoxon One Sample
1	81 (P18)	3.00 (0.50)	W = 2.00 p = 0.564
2	119 (P5)	4.00 (0.50)	W = 10.00 p = 0.059
3	196 (P3)	5.00 (0.50)	W = 21.00 p = 0.023

The summary of results for the Painting 2 by Simon Goldberg are shown in Table 6.2. It can be seen that only Description 1 is rated significantly better than the midpoint of the scale. Upon comparing the three comparisons, a Related-Samples Friedman's Two-Way Analysis of Variance by Ranks showed there was a significant difference in the ratings among the three descriptions ( $H = 8.00$ ,  $p < 0.018$ ). Post-hoc comparisons showed that Description 1 was rated significantly better than Description 2 ( $p = 0.028$ ), other comparisons did not differ significantly from each other. In the case of the Painting 2 by Simon Goldberg, the description with a medium length is considered the most favourable to the blind and partially sighted people, while the descriptions of longer and shorter length are not considered different from each other.

**Table 6.2 Summary of results of Painting 2 by Simon Goldberg, "Askrigg, Wensleydale, looking towards Addleborough", materials unknown, 1988**

Description	Length - words (Participant)	Median (SIQR)	Wilcoxon One Sample
1	143 (P5)	4.50 (0.5)	W = 21.00 p = 0.024
2	219 (P8)	3.00 (0.5)	W = 2.00

			p = 0.564
3	113 (P10)	3.50 (0.5)	W = 7.50 p = 0.317

The summary of results for the Painting 3 by Nicolaes Eliasz Pickenoy are shown in Table 6.3. It can be seen that only Description 3 is rated significantly better than the midpoint of the scale, although Description 1 approached close ("a trend towards significance"). Upon comparing the three comparisons, a Related-Samples Friedman's Two-Way Analysis of Variance by Ranks showed there was a significant difference in the ratings among the three descriptions ( $H = 6.33$ ,  $p < 0.042$ ). Post-hoc comparisons showed that Description 3 was rated significantly better than Description 2 ( $p = 0.030$ ), other comparisons did not differ significantly from each other. In the case of the Painting 3 by Nicolaes Eliasz Pickenoy, the Descriptions 1 and 3 with a longest and medium length respectively, are both considered good to the blind and partially sighted people, although only Description 3 is considered better than Description 2.

**Table 6.3 Summary of results of Painting 3 by Nicolaes Eliasz Pickenoy, "Portrait of a lady with white ruff", oil on panel, 1640**

Description	Length - words (Participants)	Median (SIQR)	Wilcoxon One Sample
1	228 (P11)	4.00 (0.5)	W = 10.00 p = 0.059
2	101 (P16)	3.00 (0.5)	W = 3.00 p = 0.157
3	170 (P12)	4.00 (0.5)	W = 21.00 p = 0.023

## 6.4 Discussions

The results from this study show that the blind and partially sighted participants considered long and medium descriptions of all 3 paintings. In addition to the length of the descriptions, blind and partially sighted participants primarily considered the descriptions had aspects such as perspective (viewpoint), size, colour, location of elements, more detailing, shading information, objectivity, and correct language usage. Some of the general comments on “most useful” aspects of the nine descriptions are seen detailed enough:

“The exciting part of the description is again perspective. It's impossible for me to understand how this can be conveyed in a picture, but here, it was described perfectly.” (VI1)

“..I got a feeling for where we were viewing from and an appreciation of where we were in the room.” (VI2)

“..Having info on the perspective is very helpful. Also giving measurements makes it clearer and easier to understand. Having shade information is also good e.g. light blue table..” (VI3)

“I liked the topographical positioning of objects. This, for me, is quite important. The person describing this picture was objective, which again, I liked.” (VI1)

“..It describes colours, locations of elements on the painting and the foreground/background really well. I could picture in my head the painting from the description pretty well.” (VI5)

“The description of the clothing. Also, terminology. In the first description, she is described as smiling. In this one, it's a grin.” (VI1)

The overall overview of the descriptions showed highly favourable results regarding their usefulness to people who are blind or partially sighted. Interestingly, despite the limited sample size, statistically significant findings were obtained. It's intriguing that the longest description is not consistently considered as the most useful one.

## CHAPTER 7. DISCUSSIONS AND CONCLUSIONS

In this chapter, the discussion of the outcomes from the three studies are discussed. The limitations of the project and future prospects are suggested in section 7.4 and 7.5 respectively. The conclusion is presented in the final section of this chapter.

### 7.1 Discussion of Study 1

According to the results of the Delphi study in which three key groups of relevant stakeholders, people working in the art world, interested members of the public (i.e., those interested in art, but not working in the art world) and blind and visually impaired rated the guidelines on a median scale of 6.0-7.0, showed that 2 aspects that is, 'Language' and 'Practice Run' were declared "very good as it stands" in the descriptions for all artwork images. For the 'Preamble' (overview) guideline, the expert opinions emphasised mentioning striking details with simple analogies ahead of logical order descriptions. This indicates that it may be helpful to follow a logical sequence through the work, left to right, or top to bottom, as appropriate. Starting with a short overview of the work in one or two sentences, then proceed to more detail would be appropriate to provide an overview. Also, if there is a striking detail which makes the work special or which in describer's opinion may attract sighted viewers, to be described that in the beginning to try to create the same experience for blind and partially sighted people. In addition, a use of simple analogies to something familiar that people might have experienced by touch can be helpful. For the guideline on 'Size', expert opinions highlighted the importance of referencing size in relation to components that can be understandable to a broad audience, including blind and partially sighted people. It indicates that use of comparisons may be helpful to which everyone is able to relate to. Experts also emphasized on establishing perspective when talking about 'Composition' as a guideline. This suggests to give better orientation in imagining the artwork better. The guideline 'Locations and Directions' proved to be confusing and was suggested to integrate into 'Composition', as they appeared closely interconnected. The recommendations also talked about describing the texture of the artwork for the guideline on 'Medium, Style, and Technique'. It suggests that the describer can consider to distinguish effects that apply to a work as whole, from those that have been used to draw attention to certain parts of it and relate to an artist's overall manner of working.

Though the opinions on 'Colour' were intriguing, the need for greater specificity in describing factors such as colour intensity and shades when conveying colour information to blind and visually impaired people was emphasised. Therefore, it seems that colour can also be useful to convey meaning or mood. It was found that some partially sighted people see some or all colours while others do not see at all, some blind or partially sighted people are interested in colour while others are not. A some blind and partially sighted people are interested in colour having learnt about them, it is important to provide colour information for those who are interested, those who are not interested can skip those parts of a description.

## 7.2 Discussion of Study 2

The study showed that participants found creating descriptions challenging when using longer guidelines, which they found overwhelming to remember. However, participants diligently applied the guidelines to create useful descriptions of artworks, resulting in an average description length of about 111 words, ranging from 95 to 125 words. This indicates that the participants were confident in applying the guidelines. The most frequently mentioned aspects in the descriptions were colour, describing people, objectivity and subjectivity and language, indicating their major role in describing artwork for blind and partially sighted people. However, only half of the participants mentioned the size of the artworks, with image 6 receiving the highest size mentions at around 80%. Aspects like perception and composition, as well as medium, style, and technique, were moderately mentioned. In discussion, colour, objectivity and subjectivity, size, perception, style, and technique are important aspects to include in image descriptions for the blind and partially sighted people. There were varied perspectives on describing colours in image descriptions, with 35% of participants finding it difficult, particularly in terms of colour description and image detailing. This difficulty might be related to the perceived lengthiness of the guidelines, making them challenging to recall, or the challenge of describing artworks for people who cannot see.

## 7.3 Discussion of Study 3

The results of this study show that blind and partially sighted people found both long and medium descriptions of all three paintings to be useful and effective. Beyond the length of the descriptions, blind and partially sighted people placed considerable importance on various aspects such as perspective (the viewpoint), size, colour, location of elements, level of detail, shading details, objectivity, and the use of appropriate language. In discussion, the overall feedback of the descriptions was highly positive, indicating their value and usefulness to blind and partially sighted audience. Remarkably, despite the study's limited sample size, it yielded statistically significant results about the length of the descriptions. It suggests that the longest description may not deem the most useful to the blind and partially sighted people, which emphasises the importance of other descriptive methods in the descriptions.

## 7.4 Limitations of the Thesis

The project is made up of three studies aimed at creating guidelines for the general public to describe artworks to blind and partially sighted people, and each study has been successfully connected. However, this project is limited to a one-off straightforward crowdsourcing exercise. This might not accurately show how a real crowdsourcing study works, which could limit the findings of this study.

The project falls short on conducting a study 2 involving History of Art students to evaluate the quality of their descriptions, which could be important due to potential limitations in the general public's understanding of art.

## 7.5 Future of the Thesis

While participants in Study 2 found the guidelines to be too long, it is important to note that they were signing up in a one-off study rather than participating to a real crowdsourcing exercise. As a result, the logical approach would involve refining the guidelines without necessarily making them shorter. Eventually, a practical step would be to conduct a real crowdsourcing study in collaboration with a museum or the University of York, to have their works of art described. In addition, a future study to this project could involve History of Art students to evaluate whether they create better descriptions, as assessed by blind and partially sighted people. History of Art students generally possess a broader understanding of artworks, making their insights valuable. Examining how these students engage with the guidelines and the extent to which they find them useful in creating descriptions would be an intriguing area of investigation.

## 7.6 Conclusions

The results of the three studies involving key stakeholders, including those from the art world, interested members of the public, and blind and partially sighted people, have shed light on the strengths and improvements for creating descriptions of artworks. Valuable insights were gained for the preamble (overview), size, perspective, colour and medium, style, and technique, catering to the diverse preferences of blind and partially sighted people. The description length may not necessarily be long but should be detailed enough as discussions show that the factors such as perspective (viewpoint), size, colour, element placement, level of detail, shading, objectivity, and appropriate language usage are highly important to these blind and partially sighted people. In conclusion, these insights provided valuable guidance for creating useful descriptions for works of art.

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## APPENDIX A

Table A. Comparison between Bai's guidelines and revised guidelines

Bai's Guideline	Revised Guideline
<p><b>Overview:</b> Start with a short overview of the work, then proceed to more detail. In both the overview and detail, try to follow a logical sequence through the work.</p>	<p><b>Overview:</b> Start with a short overview of the work, then proceed to more detail. First sum up the work in one sentence, then elaborate. A blind or partially sighted person may find that one sentence is sufficient information. In both the overview and detail, try to follow a logical sequence through the work, left to right, top to bottom and so on, as appropriate.</p> <p>On the other hand, if there is a very striking detail or something that makes the piece special, that will attract sighted viewers, perhaps describe that first to create the same experience for blind and partially sighted people. Using simple analogies to something familiar can be helpful. But remember blind people may not have as much experience of the visual world as sighted people, so use very familiar ideas, that people might experienced by touch, for example:</p> <p><i>It's as big as a car/an orange</i>  <i>It's a long rectangular shape, like a shoe box</i>  <i>The body of the mandolin is shaped like a pear</i>  Whereas "like the night sky dotted with brilliant stars" is no help to someone who has never seen the night sky.</p>
<p><b>Size:</b> of both the overall work and components within it. You can use comparisons that everyone is able to relate to (e.g. a work is about three times a typical man's height) or that are relevant to the work.</p>	<p><b>Size:</b> of both the overall work and components within it. You can use comparisons that everyone is able to relate to, for example for a very large work, such as a sculpture in the open air, it is about three times a typical man's height, for a small work, actual dimensions are useful.</p>
<p><b>Composition:</b> describe the key elements of the piece and how they fit together.</p>	<p><b>Composition:</b> describe the key elements of the piece and how they fit together. It can be helpful to establish a point of view, for example whether you are looking directly at a scene, from above or below.</p>
<p><b>Medium, style, technique:</b> provide information (to the extent that you can) about the medium or materials the work is made of, if relevant the technique(s) used and the artist's style. But to avoid jargon that an average person would not be familiar with, "abstract" and "realistic" are</p>	<p><b>Medium, style, technique:</b> provide information (to the extent that you can) about the medium or materials the work is made of, if relevant the technique(s) used, and the artist's style. But to avoid jargon that an average person would not be familiar with, "abstract" and "realistic" are</p>

likely to be understood but "Geometric Abstractionist" and "French Academic" are not.	likely to be understood but "Geometric Abstractionist" and "French Academic" are not.
<b>Locations and directions:</b> blind and partially sighted people are very often taught to locate things using a clock face, so this can be used to locate things in a work (e.g. in the example it says, "at three o'clock is a convict"). The words left and right can be ambiguous. So if you use these words, always explain them – the viewer's left or to the left of an object in the work (e.g. to the convict's right are three large tree trunks).	<b>Locations and directions:</b> blind and partially sighted people are very often taught to locate things using a clock face, so this can be used to locate things in a work (e.g. in the example it says, "at three o'clock is a convict"). The words left and right can be ambiguous. If you use these words, always explain them – the viewer's left or to the left of an object in the work.
<b>Colour:</b> some partially sighted people see some or all colours, others do not; some are interested in colour, others are not. Some blind people are also interested in colour, others are not. So describe colours so the information is there for those who are interested.	<b>Colour:</b> some partially sighted people see some or all colours, others do not; some are interested in colour, others are not. Some blind people are also interested in colour, others are not. Describe colours, and be as specific as possible, so the information is there for those who are interested.
<b>Language:</b> Use language that is clear and precise, but vivid and interesting. Don't worry about using some language that seems oriented to the visual world, blind and partially sighted people usually understand this, as they are so used to hearing it.	<b>Language:</b> Use language that is clear and precise, but vivid and interesting. Don't worry about using some language that seems oriented to the visual world, blind and partially sighted people usually understand this, as they are so used to hearing it.
<b>Objective and subjective:</b> Be generally objective in describing the work, but interpretation or your subjective reaction is also interesting. Just make sure it is clear - what is your interpretation and what is objective description.	<b>Objective and subjective:</b> Be generally objective in describing the work, but interpretation or your subjective reaction is also interesting. Just make sure it is clear - what is your interpretation and what is an objective description?
<b>Try a practice run:</b> Not Available	<b>Try a practice run:</b> If you want to practice, you could create a description of a work of art, then read that description to a friend who has never seen it. Ask them to describe the work. Then both look at it and discuss how well the description captured the work.

## APPENDIX B

**Table B. Comparison between example based on existing guidelines and revised guidelines**



Convict in a billabong. Sidney Nolan. 1951. 121 cm x 151 cm. Oil paint, canvas. © Reproduced with the permission of the Sidney Nolan Trust / Bridgeman Art Library

Bai's Worked Example	Revised Worked Example
<p>A large oil painting of a convict standing with three tree trunks to his right. The painting is over a metre high and one and a half metres long. The painting is semi-abstract, the tree trunks which dominate the middle of the picture from top to bottom, are quite realistically depicted. However, the convict is small in comparison, the trees are more than six times as tall as he is, and he is quite crudely painted. It is hard to tell whether the convict is really small in comparison to the trees or that he is standing further away which makes him look small, as there is little indication of depth or perspective in the painting. The trees have no leaves, they each start with a single trunk very roughly painted in dark brown, fading to white and then barely spreading out into pale blue-grey twisted branches. They may give the viewer the impression of being lit by a ghostly light from below.</p> <p>The convict is only shown by his black and white horizontally striped convict's top and a simply painted face. His arms are barely visible, but his hands, legs and feet are not visible at all. The background is very roughly painted with the paint brush strokes very visible. The colour shades from dark brown at the bottom of the</p>	<p>An oil painting of a man standing by large bare tree trunks. It is over a metre high and one and a half metres long. The painting is semi-abstract, the tree trunks which dominate the middle of the picture from top to bottom, are quite realistically depicted but the man is crudely painted. It is clear he is a convict as he is wearing a black and white striped top.</p> <p>He is very small in comparison with the trees which are more than six times as tall as he is. It is hard to tell whether he is standing next to the trees and is small in comparison to the trees or whether he is standing further away which makes him look small, as there is little indication of depth or perspective in the painting. The trees have no leaves, they each start with a single trunk very roughly painted in dark brown, fading to beige and then spreading out a little into pale blue-grey twisted branches. They may give the viewer the impression of being lit by a ghostly light from below.</p> <p>The background is very roughly painted with the brush strokes visible. The colour shades from dark brown at the bottom of the painting, some mid blue in the middle to more dark brown at the top, with mixing of the colours. There are no features visible in this background, just the paint</p>

painting, some dark blue in the middle to black at the top, with mixing of the colours, particularly across the middle third of the painting. There are no features visible in this background, just the paint strokes and the changing colour.

The overall impression the painting gives me is of the convict lost and overwhelmed by this featureless, incomprehensible landscape, with the ghostly, twisted branches of the trees suggesting his mental torture.

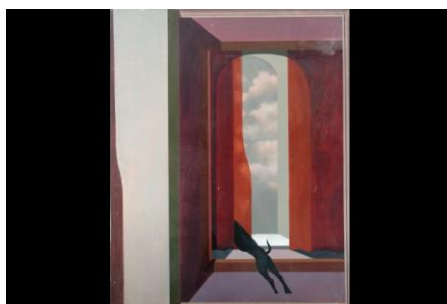
strokes and the changing colour.

The overall impression the painting gives me is of the convict lost and overwhelmed by this featureless, incomprehensible landscape, with the ghostly, twisted branches of the trees suggesting his mental torture.

## APPENDIX C

### Guidelines for describing works of art for blind and visually impaired people

We start with an example of a description of a painting for blind and partially sighted people, which is used throughout the guidelines to illustrate points. There is also a second example description at the end of the guidelines.



David Evans, Window Holds All the Secrets, 1968, oil on canvas, 154 cm x 122 cm, University of York Art Collection

This is a large oil painting depicting a mysterious architectural space, dominated by an arched window opening to the sky through the frame of which a small black animal is leaping. The painting is around a metre and a half tall and over a metre wide, such that the window and animal, the hooked tail and smooth back legs of which resemble those of a slender dog, could almost be life-size. The window is a little to the viewer's right, while the animal leaps up from below towards the viewer's left. The viewer cannot see its front, which has disappeared into what could be curtains. The flat manner in which all elements have been painted makes it hard to distinguish surfaces from one another. Against the light from the window, the seeming curtains turn a lighter shade of red, indicating their thinness, but they still seem rigid.

A strong shadow cast onto the purple wall around the window highlights not just its wooden frame but another frame, closer to the viewer, the moulded profile of which suggests a picture frame. In fact, three sides of it are in line with the edges of the canvas. In the distance, all that the viewer can see through the window are little white clouds in the sky.

The painting depicts things that are familiar and close at hand but uses a peculiar perspective and a series of interior frames to distance the viewer from them and create a sense of a picture within a picture, questioning our sense of reality.

### The Guidelines

Start with a short overview of the work in one or two sentences, then proceed to more detail. A blind or partially sighted person may find that one or two sentences are sufficient information.

*In the example description: "This is a large oil painting depicting a mysterious architectural space, dominated by an arched window opening to the sky through the frame of which a small black animal is leaping."*

In both the overview and detail, it may be helpful to follow a logical sequence through the work, left to right, or top to bottom, as appropriate. On the other hand, if there is a striking detail or something that makes the work special, which will attract sighted viewers, perhaps describe that first to try to create the same experience for blind and partially sighted people.

*In the example description, the detailed description starts with the window and the dog, as these*

*are the most important parts of the painting: "... such that the window and animal, the hooked tail and smooth back legs of which resemble those of a slender dog, could almost be life-size. The window is a little to the viewer's right, while the animal leaps up from below towards the viewer's left. The viewer cannot see its front, which has disappeared into what could be curtains."*

Using simple analogies to something familiar can be helpful. But remember blind people may not have as much experience of the visual world as sighted people, so use very familiar ideas, that people might have experienced by touch, for example:

It's as big as a car/an orange

The body of the mandolin is shaped like a pear

smooth back legs of which resemble those of a slender dog

Whereas "shaped like an ancient Egyptian ankh" may not be helpful to people who have never seen ancient Egyptian art (whether they are blind or sighted).

Useful aspects to describe when you get into the detail include:

**Size:** of both the overall work and components within it. For a small work, actual dimensions may be useful. For all works, you can use comparisons that everyone is able to relate to. For example, for a very large work, such as a sculpture in the open air, it is about three times a typical person's height.

*In the example description: "The painting is around a metre and a half tall and over a metre wide, such that the window and animal, the hooked tail and smooth back legs of which resemble those of a slender dog, could almost be life-size."*

**Perspective and Composition:** describe the key elements of the piece and how they fit together. It can be helpful to establish a point of view. For example, whether you are looking directly at a scene, from above it or from below. A sense of picture space is also useful. Are things represented to be close to you or far away? If so, how has this been achieved? It is through creating lines of perspective or by intensity of colour or focus? Could you imagine yourself to be present in the picture?

Blind and partially sighted people are very often taught to locate things using a clock face, so this can be used to locate things in a work.

On the other hand, the words left and right can be ambiguous. You can use these words, but explain them – the viewer's left or to the left of an object in the work when looking at it from in front.

Describe any obvious sense of balance or imbalance in the arrangement of the work's features. This can also be done by describing visual hierarchies, such as a figure or object occupying a particularly large amount of space.

*In the example description: "The window is a little to the viewer's right, while the animal leaps up from below towards the viewer's left. The viewer cannot see its front, which has disappeared into what could be curtains."*

**Medium, style, technique:** provide information (to the extent that you feel able) about the medium or materials the work is made of, if relevant the technique(s) used, and the artist's style. But to avoid jargon that an average person would not be familiar with, "abstract" and "realistic" are likely to be

understood but "Geometric Abstractionist" and "French Academic" are not.

Attention to texture and surface can be helpful. For example, something in a painting might be made to appear more present or meaningful both by using the paint thinly, to allow for more detail to be depicted, and more thickly and roughly to provide a sense of tactility.

You may wish to distinguish effects that apply to a work as whole, from those that have been used to draw attention to certain parts of it. The former may be features we would say relate to an artist's overall manner of working. The latter are those that relate to the particular example in question. For example, you could note how a painting was created by the application of regularly-sized blocks of different colours as a technique but also comment on how some of them meld together in a large area of sky in a landscape.

*In the example description: "The flat manner in which all elements have been painted makes it hard to distinguish surfaces from one another."*

**Colour:** describe important colours in the work, and be as specific as possible, so the information is there for those who are interested. Colour can also be used to convey meaning or mood, so if you feel colour is important in the work (either overall to the work or in particular aspects), think about describing how colour is used in this way.

Descriptions of colours can go beyond the basic colour terms (red, blue, green), so phrases like "a very vibrant red" or a "greenish blue" are good, as are colours with comparisons to aspects of the world that people are likely to be familiar with "blue like the sea" or "as green as summer grass". But there is no need to use the technical names used by artists to describe their pigments such as "burnt sienna" or yellow ochre".

Some partially sighted people see some or all colours, others do not; some are interested in colour, others are not. Some blind people are also interested in colour having learnt about them, even if they have never experienced them directly, others are not. So, it is important to provide colour information for those who are interested, those who are not interested can skip those parts of a description.

*In the example description: "... the seeming curtains turn a lighter shade of red, indicating their thinness ... A strong shadow cast onto the purple wall around the window highlights not just its wooden frame but another frame..."*

**Describing people:** as with the other areas, be as specific about people in a work, if they are important. Gender, age, ethnicity, appearance, dress might all be of interest or not.

*In the second example description, the painting includes the figure of a man, we know he is a convict from the title of the work, but he is not depicted in any detail. The description tries to convey this: "... a man standing by large bare tree trunks. ... The man is crudely painted. It is clear from the title that he is a convict. He is wearing a black and white horizontal striped top, perhaps suggesting his convict status, but no other detail of his appearance is visible. "*

**Language:** Use language that is clear and precise, but vivid and interesting. Don't worry about using some language that seems oriented to the visual world, blind and partially sighted people usually understand this, as they are so used to hearing it. So you might include "On their far right, the viewer will see..." or "no other detail of his appearance is visible". Blind and partially sighted people are rarely offended by this, and often remark that they also "see" the world, but in different ways.



*In the example description: Vivid but clear language: "... while the animal leaps up from below towards the viewer's left. The viewer cannot see its front, which has disappeared into what could be curtains." Using visually oriented language: "In the distance, all that the viewer can see through the window are little white clouds in the sky."*

**Objective and subjective:** Be generally objective in describing the work, but interpretation or your subjective reaction is also interesting to blind and partially sighted people – this tends to explain why people find visual art interesting and often moving. Just make sure it is clear what is your interpretation and what is objective description.

*So the example description ends with a more subjective, overall reaction to the painting: "The painting depicts things that are familiar and close at hand but uses a peculiar perspective and a series of interior frames to distance the viewer from them and create a sense of a picture within a picture, questioning our sense of reality."*

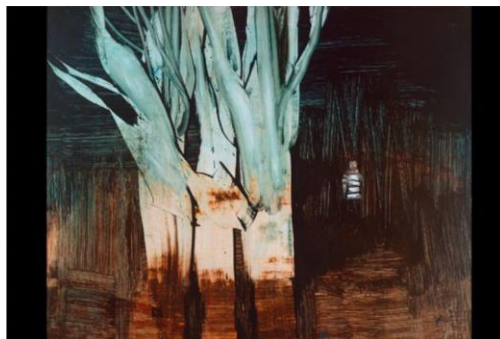
*Also in the second example description, the person who provided the description is Australian (as is the artist) and they provided a quite emotional impression of the painting, as they are very familiar with the history of the convicts in Australia (it would be very interesting to compare this description with descriptions provided by British people):*

*"The overall impression the painting gives me is of the convict lost and overwhelmed by this incomprehensible and alien landscape, with the ghostly, twisted branches of the trees suggesting his mental torture."*

**You might try a practice run:** If you want to practice, you could create a description of a work of art, then read that description to a friend who has never seen it. Ask them to describe the work or even draw it. Then both look at it and discuss how well the description captured the work. (You do not need to do that for this study, but this might be useful for people who participate in future crowdsourcing exercises).

Finally, don't worry if you don't follow the guidelines perfectly, they are here to provide you with ideas and information, not as a rigid set of rules!

**The second example description (rather long):**



Sidney Nolan, *Convict in a billabong*, 1951, 121 cm x 151 cm, Oil on canvas. © Reproduced with the permission of the Sidney Nolan Trust / Bridgeman Art Library.

An oil painting of a man standing by large bare tree trunks. It is over a metre high and one and a half metres long. The painting is semi-abstract, the tree trunks which dominate the middle of the picture from top to bottom, are quite realistically depicted but the man is crudely painted. It is clear from the title that he is a convict. He is wearing a black and white horizontal striped top, perhaps

suggesting his convict status, but no other detail of his appearance is visible. The title refers to a billabong, the Australian term for an oxbow lake, or a river loop that becomes isolated from the main stream and forms a pool. But this is hardly visible in the painting.

The man is very small in comparison with the trees which are more than six times as tall as he is. It is hard to tell whether he is standing next to the trees and is small in comparison to the trees or whether he is standing further away which makes him look small, as there is little indication of depth or perspective in the painting. The trees have no leaves, they each start with a single trunk very roughly painted in dark brown, fading to beige and then spreading out a little into pale blue-grey twisted branches. They may give the viewer the impression of being lit by a ghostly light from below.

The background is very roughly painted with the brush strokes visible. The colour shades from dark brown at the bottom of the painting, some mid blue in the middle (suggesting the billabong, but very vaguely) to more dark brown at the top, with mixing of the colours. There are no features visible in this background, just the paint strokes and the changing colour.

## APPENDIX D



Figure 1. Anchusa. Eileen Scott. 2000. 61 cm x 42 cm. Mixed media.



Figure 2. Autumn. E. Biscomb. 1982. 36 cm x 26 cm. Watercolour.



Figure 3. Askrigg, Wensleydale, looking towards Addleborough. Simon Goldberg. 1988. 73 cm x 98 cm. Painting.



Figure 4. April showers. Ann-Marie LeQuesne. 1985. 65 cm x 100 cm. Print.

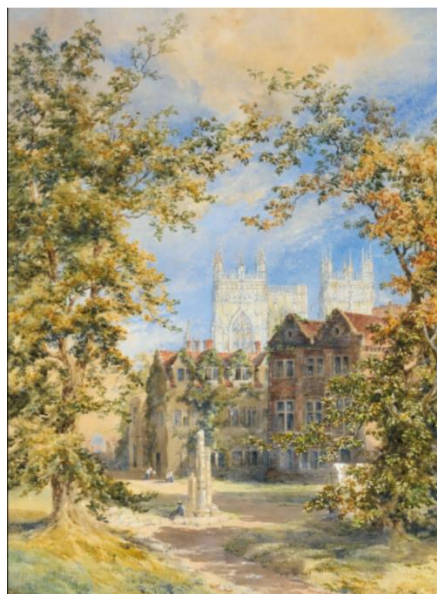


Figure 5. York Minster & the School for the Blind from the ruins of St. Mary's Abbey. Constance Frederica Gordon-Cumming. Undated (early 20th century). Watercolour; gouache.



Figure 6. Portrait of a lady with a white ruff. Nicolaes Eliasz Pickenoy. 1640. 49 cm x 42 cm. Oil on panel.

## APPENDIX E



Figure 1. Scott painting - Anchusa. Eileen Scott. 2000. 61 cm x 42 cm. Mixed media.



Figure 2. Askrigg, Wensleydale, looking towards Addleborough. Simon Goldberg. 1988. 73 cm x 98 cm. Painting.



Figure 3. Portrait of a lady with a white ruff. Nicolaes Elias Pickenoy. 1640. 49 cm x 42 cm. Oil on panel.